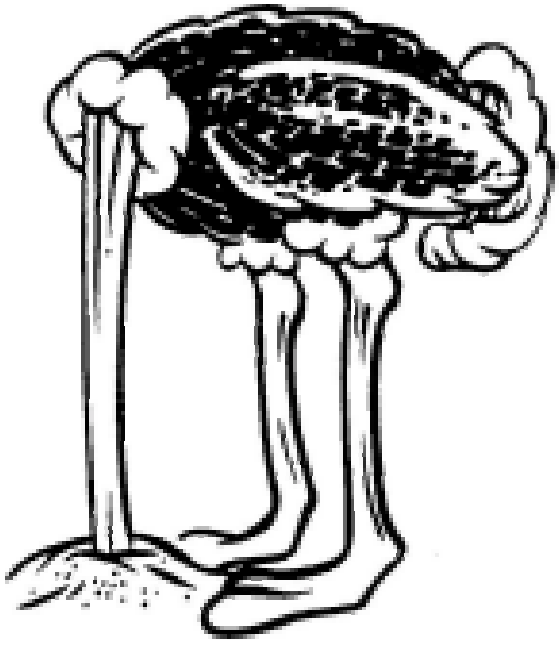
ANYTHING BUT A HEAD IN THE SAND?

Pioneering Ostrich Farming in New Zealand



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ABSTRACT

The aim of this research was to identify how farmers learn how to farm using pluriactive lifestyle block ostrich farmers who are part of the New Zealand ostrich industry as a case study. Ostrich farming is comparatively new to New Zealand farmers and the industry has attracted innovative individuals who have developed informal learning strategies. Ostrich farmers use other farmers as their main resource which is mainly facilitated through events organised by the New Zealand Ostrich Association (NZOA) and aimed at lifestyle block farmers. Ostrich farmers' community of practice is centred around their membership to the Association which enables farmers to come together to learn and socialise. For learning to effectively take place the key is social interaction, where ideas can be transferred between farmers. This thesis illustrates the important events and structure of the industry and how this has shaped farmer learning. Through semi-structured interviews and participant observation on a chick rearing farm I was able to gain a picture of how lifestyle block farmers balance full time off-farm employment while running stock, in an attempt to satisfy their version of the rural idyll. The industry is now in decline as most of the early players have exited the industry and it is now focused around New Zealand Ostrich Export (NZOE) goals. By exploring the period called the breeder phase which was characterised by some farmers making a fortune as ostrich farming was the 'next big thing' and the history since then, I have identified how these particular farmers have learned how to farm.

GLOSSARY

Ajistment: Farmers offer this service where they farm investors stock on their property for a fee.

Candle: The process of shining a torch over each egg in the incubator to monitor embryo development.

Hatcher: A room or large box that keeps the temperature about 30°, with airflow. The chicks are moved into the hatcher once they come out of the incubator.

Monitor Farms: Widely used in funded farming research. Farmers volunteer their property and stock to be used in trials for new technology or management techniques, in order to discover best practices. It is a learning technique for the farming group where farmers can observe the monitor farms' practices.

NZOA: New Zealand Ostrich Association

NZOE: New Zealand Ostrich Export

OESC: Ostrich and Emu Standards Council

Pipped: When the chick inside the egg pushes through the inner membrane into the air sack.

RMP: Risk Management Programmes

SFF: Sustainable Farming Fund

WWOOFers: Willing Workers on Organic Farms

CHAPTER ONE
INTRODUCTION

Ostriches are not a 'normal' or usual part of the New Zealand rural landscape, yet they are the feature of the movie *In My Father's Den* (2004), based on an iconic New Zealand novel (1972) authored by Maurice Gee. In the movie the main characters own an ostrich farm which in itself is odd because a farm with ostriches is not representational of farming in New Zealand. So why did the film makers choose an ostrich farm as the rural setting when ostriches did not exist in New Zealand when the book was written?

Farming in New Zealand is an essential feature of our economy. Since the removal of subsidies farmers have increasingly diversified their farming business, as a strategy to maintain flexibility in the marketplace. Therefore, farmers have had to learn new skills over time to keep up with the changing face of farming. This thesis primarily explores *how farmers learn how to farm*. The secondary objectives of this research are identifying the key events in the history of the New Zealand ostrich industry, how the industry has come to this point, and how farmers 'do' ostriches. Identifying how farmers learn is a relevant research inquiry because if farmers can learn more efficiently and effectively this will have a positive outcome for their business and the economy. Prior to the 1984 restructuring, farmer learning in New Zealand was the responsibility of the State through the extension approach, however between 1987-1990 this service changed to a user pays system (MAF: 1994, 64). One impact of these changes meant farmers had to rethink their paths to learning opportunities to ensure survival. Some

farmers became more specialised in their production and others have diversified into alternative farming enterprises. Ostrich farming is an example of an exotic product that has been through bust and boom phases, but one which has survived because farmers have developed their farming skills to greater ensure their success at producing ostriches on a viable commercial scale. This thesis examines the preferable and prevalent use of participation in the informal farmer learning sphere with specific reference to ostrich farmers, who have had to upskill themselves and their families because ostriches are a new type of livestock to New Zealand. In this chapter I introduce the theory and method I used as a framework, ostrich farming as a case study for farmer learning, and a brief overview of the structure of the thesis.

The main aim for this research was to identify how farmers learn how to farm ostriches. Farmer learning has been the focus of some research inquiries and I have chosen to frame this research through Wenger's theory of social learning (1998). His ideas can be transferred to any learning situation. The learning process occurs through social interaction and the balance between practice, community, identity and meaning. Each of these components is interconnected and forms the individual's sense of place and belonging. The theory works in accordance with this research topic because as farmers do their practice they are constantly negotiating meaning, their identity and their place within the community of practice. Ostrich farmers actively utilize participation as the primary means for transferring knowledge, technology and skills within their community of practice. Wenger's social theory of learning is useful for this research because it shows how the ostrich farmers' learning experiences, while containing some unique qualities, has common characteristics to any learning process.

The methodological approach taken to conduct this research was participant observation and interviewing. I attended a field

day, the annual conference, a slaughtering session, interviewed some ostrich farmers using a semi-structured format, and worked on a chick rearing farm for six weeks. All these experiences permitted interaction with ostrich farmers and the chance to listen to stories and ask questions about their ostrich farming experiences.

An ostrich farmer is any farmer who grows ostriches on a commercial scale with the goal of making a profit. The South African trade leads ostrich production as they are the main global suppliers. Ostriches were first imported into New Zealand in the early 1990s and like many niche products they are adopted by part time farmers, mainly because part time farmers have the time, resources and capital to invest in a potential filled industry and become specialised. Ostrich farming in New Zealand has an appeal to many types of farmers because they can be run as a sideline income to full time farming or off-farm employment. This thesis focuses on the lifestyle block ostrich farmers in the Canterbury region. There are also full time farmers who farm ostriches however they differ in lifestyle, learning preferences, practical experience and desire to farm ostriches. Currently around 30 full time farmers run ostriches at the finishing stage mainly as a diversification strategy. Because of the newness of the industry farmers have had to learn new skills for management and handling of the birds. Learning how to farm ostriches occurs in informal ways such as trial and error, drawing on previous farming experience, written information, handling the birds and talking to other ostrich farmers.

Chapter two: history of ostrich farming in New Zealand explains how farmers have learned how to farm ostriches. This shows how farmers have arrived at the way ostriches are farmed in the South Island. It is important to understand the journey farmers go through in deciding to invest in new stock, acquiring new stock

and the learning steps they took to make their farming practice diverse and profitable, and that they were able to adapt it to their lifestyle. It is possible to understand farmers entry into the industry by identifying and interpreting the learning environments these particular farmers are exposed to.

Chapter three: current ostrich farming in the South Island, addresses the reasons why farmers enter into ostrich farming, how they 'got into' the industry and details how the industry is currently run. Ostrich production has segmented over time; farmers have become specialised in one area of ostrich farming. Included is a description of my experience on the chick rearing farm and the skills I gained through the practice. I also look at issues currently pertaining to farmers.

In chapter four: how farmers learn how to farm, I argue that farmers claim other farmers are the best source of learning. The learning chapter uses Wenger's theory to show how ostrich farmers' learning occurs. Mentioned briefly is a review of the available farming learning literature in New Zealand. Each informal learning strategy of ostrich farmers is discussed in turn to answer the thesis key research question. Each chapter asserts the importance of farmers' participating for learning to occur in the industry. The thesis will firstly describe the methodology used.

Methodology

Rationale Behind the Study

In my honours year, I completed a project about ostrich farming and the risks involved in this new farming venture. I discovered information for that assignment by interviewing two farmers from my personal networks. However, I still thought there was more for me to learn about the industry. I sat down one night with one of the farmers I already knew and asked him to explain

everything he knew about ostriches, the industry and his experiences. Having known him for many years I came away wondering how he learnt how to establish the ostrich farming system he has in place today considering his traditional farming background of sheep and cattle. This discussion led me to want to learn more about how farmers learn how to farm.

Introduction

The main objective of this research was to investigate how farmers learned how to farm ostriches. A qualitative research method was the best approach when investigating this type of inquiry because it means the researcher can actively engage with participants and observe instances where learning takes place. There are a small number of ostrich farmers around Christchurch who mainly farm on lifestyle blocks, some of whom I interviewed one on one, mostly in their own homes. Participants were obtained primarily from the annual ostrich conference in June 2005. Nine interviews were conducted during July and August 2005, consisting mostly of lifestyle block couples in their fifties who had full time employment off the farm. Most of the information presented in this thesis is quoted directly from farmers' memories and experiences as written information specifically on the New Zealand ostrich industry is limited. In addition to interviewing farmers, I experienced three off-farm learning events that farmers attend; a field day, the NZOA annual conference and a meeting where a veterinarian addressed farmers. I was also given the opportunity to attend a processing session at the slaughter plant, as well as learning on the farm by spending six weeks on a farm raising chicks and finishing birds. Learning in a similar manner to ostrich farmers aided my understanding that raising chicks is hard work for little return. By

utilising qualitative research methods I was able to gain credibility in my inquiry from the perspective of the participants (Burns: 2000) because their views are of central importance. This methodology section outlines how and where I conducted my research on learning how to farm ostriches.

Beginning Research

In the beginning of my research inquiry about ostriches, I had trouble 'getting into' the industry. There are so few farmers currently involved, compared to earlier years, it was difficult to access current farmers. The New Zealand Ostrich Association (NZOA) website has a page where inquiries can be submitted; however I did not receive a single reply to my inquiry. The export company emailed me a phone number to the local agent, but again I received no response. I finally made a contact a few months after I began my thesis, by receiving a rejected email from an email address I found on a MAF webpage about ostriches. I then emailed the MAF email address to question the out of date contact. They sent me a different contact, who replied and invited me to attend a field day the following weekend. I was in! This was a huge turning point in my research as I finally had access to real ostrich farmers.

On attending the field day, I was introduced to most of the ostrich farmers in the Canterbury area. This is where I met the couple who I would later live and work with. The annual ostrich conference was only a couple of weeks away, which was where I met most of the Association members, the export players, and made contacts with farmers I could interview. Attending the NZOA annual conference gave me the opportunity to hear about current issues, meet farmers and industry players and experience from one source how farmers learn how to farm ostriches.

There is very little literature about farming ostriches. Most ostrich farming literature originates in South Africa because this country dominates the world's ostrich supply. Libraries have about three or four technical books on ostrich farming. Most articles or books mention the potential of ostrich, some general ostrich facts and history, and the quality of the products (see Kreibich and Sommer 1995, Rice and Tuckwell 1997, Hastings 1991).

New Zealand ostrich literature is very limited. In the Agricultural Census produced by Statistics New Zealand (2002), farmers were asked to specify and count numbers of all 'other' livestock. This information was collected for MAF but they did not count the numbers of particular animals they asked for, '[M]ainly due to cost and usefulness of the information' (email correspondence, McLaren: 21/04/2005). Overall, there is very little research available about ostriches and farming ostriches specific to New Zealand.

Participants

At the annual ostrich conference in June, I met with the same people from the field day and was introduced to other ostrich farmers from all over New Zealand and the South Island export company players. During the course of the weekend, I met many farmers who were very friendly and happy to share details of their farming lives with me. The participants I preferred for my study were farmers who lived around Christchurch, as it would be easier to interview them later. At the conference, I was able to gauge which farmers were from the Canterbury area by asking where their farm was located. By the end of the two day conference I had met the participants who I wanted to interview. After explaining to the ostrich farmers about my research inquiry and receiving a verbal agreement that they would participate, I gave farmers an

information sheet containing further details about my research (see appendix three). They then gave me their email addresses. Two farmers were not current Association members, one had chosen not to renew his membership and the other never joined. These farmers I knew through my social networks.

Of the nine interviews I conducted most of the farmers were couples in their fifties, who had been involved in the industry on average 6.7 years. Small lifestyle farmers became the focus of this project as most ostrich farmers in Canterbury are lifestyle block farmers, but interviews also included one full time farmer and an owner of NZOE. At least one person of each of the couples worked off the farm full time, if not both. Most of the interviewees have an urban background. The main difference between these participants and other lifestyle block owners is that they choose to farm their properties. Therefore using Cook and Fairweather's (2005) definition of types of smallholder, these people can be categorised as small farmer (see further discussion in chapter four). However, off-farm employment seems to be a more important priority than farming as they are workers in the city who choose a rural lifestyle.

Interview Schedule

I was primarily interested in how farmers learn, but also I needed a background to the New Zealand industry which I had not been able to find easily. I had pieced together a vague timeline from newspaper articles, and from various other written sources (see appendix six). I was also given access to some archives one farmer has kept over the years; these included various faxes, newsletters and past conference notes. However, I could not, for example, ascertain the exact year when ostrich farming began in New Zealand. Farmers I had asked and articles I had read all gave

different answers. As a result of my inability to find much New Zealand ostrich history I realised I had to include questions related to this as part of the interview schedule.

The interview schedule was designed to find out how farmers entered the industry, what they had to learn, challenges they faced, information about the Association, networks and communication. The interview questions were worded so farmers could tell their own stories of how they entered the industry. I had six main open-ended questions covering those main topics and then subsequent questions which acted as prompts. The six main questions followed a logical progression (Kumar: 2005). I also designed a short questionnaire as a follow up for the end of the interview, which included basic information about the farmer such as age, previous occupation, farm size, other livestock and future aspirations.

While I had some prior knowledge about the ostrich industry in New Zealand, and know that the South Island experience differs from the North Island, each farmer built on my knowledge. Therefore, by the last interviews I had more direct questions about the information I wanted (Kumar: 2005). In addition, I gained more confidence in my interviewing abilities.

The Interview Process

Each farmer has a unique story of how they came to be involved in ostriches. The best way to obtain their individual experiences of being involved in the industry was to interview in a semi-structured format. Kumar (2005) asserts a semi-structured interview is useful because issues can be raised 'on the spur of the moment'. Interviews were an important research tool for this particular research inquiry as little was known by the researcher about the topic area beforehand.

The interviews with the lifestyle block farmers took in the evenings or on weekends. I emailed my contacts after the conference and arranged individually appropriate times and locations. Most interviews took place in the farmers' own homes, and took approximately an hour. I experienced no problems with participants being tape recorded during the interview. After I stopped the tape recorder, I finished the interview with a short questionnaire.

The first interview was piloted with a farmer and then adjusted slightly as ridiculous questions were answered and other questions became more significant in the following interviews. This process was useful for testing the wording of questions as well as the flow and direction of the interview.

The advantage of face-to-face interviews is that more information is obtainable because when the interviewee digresses from the interview schedule, they share anecdotes from their experience, which is valuable for understanding their situation. Kumar (2005) outlined five advantages to interviewing of which I found three that corresponded with my experiences[1]: in depth information can be gathered by probing, information can be supplemented by non-verbal reactions (in this example, it was having the chance to see some farmers' facilities), and questions can be reworded if the respondent misunderstands. One disadvantage I experienced as the literature suggests is that interviewing is time consuming if the respondents are scattered over a large geographic area (Kumar: 2005). Most respondents lived within 30 minutes of Christchurch city; however, some were as far away as one hour's drive.

One interview was with one of the owners of New Zealand Ostrich Export (NZOE). By interviewing him I succeeded in gaining

[1] The other two advantages are: an interview is more appropriate for studying complex and sensitive areas and interviewing has a wider application in that interviews can be used with almost any type of the population (Kumar: 2005, 131).

a different perspective of the industry. NZOE are key players for the South Island industry, because without them the ostrich industry may not still be in business. Again like the history of NZOA, NZOE's history is not written. The results of this interview form a substantial section of information in chapter two.

Interviews were transcribed for coding, then cut up and organised into main themes (Kumar: 2005). This provided the distinction between chapters and what sort of information went into them.

Participant Observation

Participant observation is a primary data collection method which enables the researcher to immerse themselves in the interaction taking place (Kumar: 2005). Becoming personally involved with the study such as living and working on the chick rearing farm is typical of the qualitative approach (Burns: 2000). Observing experiences, as ostrich farmers have done, gave me the unique ability to see and interpret interactions within the learning environment.

During my field work collecting phase, in addition to interviewing, I was given the opportunities to attend a field day, attend the annual ostrich conference, be present at a meeting where the results from the Sustainable Farming Fund (SFF) study on what normal blood in ostriches is at various stages of development were presented to farmers, to view finished ostriches being slaughtered for export, and to live and work on a chick rearing farm for six weeks. All of these experiences allowed me to experience what some ostrich farmers have seen and done, as well as observe interactions in a farmer learning environment.

Field days for ostrich farmers used to be a regular occurrence nationwide. Presently they occur less frequently and are either organised by New Zealand Ostrich Association (NZOA) or New Zealand Ostrich Export (NZOE). The field day I attended in May 2005 where I met most ostrich lifestyle block farmers in Canterbury was organised by NZOA. This field day was focused around chick rearing and the host farmers outlined their practices. As happens on any farming field day, farmers learn something about the issue being presented and have the opportunity to ask questions (Fonseca: 2001). Participants had the chance to look around the host's ostrich facilities and ask questions.

The annual conference is the only time during the year when ostrich farmers all come together and are presented with current issues. By attending the 2005 conference in June, I was able to meet many ostrich farmers from all over New Zealand. The Association is made up mainly of lifestyle block farmers; they contribute to the continuance of the industry. It was at the conference that I was introduced to the NZOE team. During the morning tea and lunch breaks farmers talked amongst themselves and I was able to introduce myself to farmers I had not met. Some farmers came and spoke to me as they were interested in my project on their small industry. At the conference I was able to acquire the permission of participants who were to be interviewed later. The conference was an interesting experience in that I could see the interactions of farmers who are members of the Association.

Later in the year, results of blood tests from ostriches (as part of a project funded by the Sustainable Farming Fund) were semi finalised and presented to farmers at a meeting in Christchurch. The Association received funds from the Sustainable Farming Fund and decided to use some of the funds for a scientific research inquiry in an attempt to gauge what is 'normal' through ostrich blood analysis. I went with the couple who I would be later working

for. Some farmers from the Canterbury area attended to hear the findings of the research. A veterinarian who could interpret the numbers (which are really only useful to a veterinarian) presented the findings to farmers who learned the outcome of the research inquiry by listening. The meeting was informal and was primarily focused around what the veterinarian had to say. Attending this meeting was another experience of seeing in what capacities farmers learn new information about their farming interest.

Learning was the focus for farmers in all the aforementioned experiences; of secondary importance was the social element. In all of these instances I saw the friendly interactions between members of the Association. Farmers asked relevant questions which pertained to their interests and could be easily discussed and answered by others. There was a familiarity among attendants at these events. Farmers joked amongst themselves; many had known each other for years and all were coming together with a common interest.

In August 2005 I visited the Gore slaughtering plant, Clover Exports, and saw ostriches move from the initial stunning through to packaging ready for export. I had never been into a processing plant before so that in itself was interesting, dressing up in the white overalls, white gumboots and white hair net. It took two morning sessions for the ostriches to be sliced up and export ready. The workers stunned, plucked, sliced and weighed 128 ostriches on the first day and the carcasses hung in a chiller overnight. The next morning two of the workers butchered the carcasses into specific cuts, while the others trimmed, graded and packaged the cuts. Seeing the slaughtering of an ostrich completed the journey of understanding the purpose of farming these birds. Some ostrich farmers themselves have never seen the processing side of their livestock, even though it happens most weeks of the year.

Working on a chick rearing farm not far from Darfield was the most intensive part of the field work. It was intensive in that I lived at the farm for six weeks and helped the chicks survive through to the next stage of their lives. I learned many of the elements of caring for the chicks during this vulnerable stage of their development. I was essentially on my own during the days, as the couple both worked off the farm. While I had excellent guidance from experienced chick rearers, part of the process was adjusting to the facilities and their systems in place. However, other aspects were just common sense and observing the chicks and spending time with them everyday. Looking after the chicks was fun as it was completely different to other farming I had participated in before. Most of the processes were learning by doing, which was what the farmers I had previously interviewed had said, but doing it myself was exciting and their words really came to life. It was one thing for farmers to say to me chick rearing is hard and I nodded, but having the opportunity to do it for myself brought new meaning to hard work.

By investing time in all these experiences, I was able to gain a greater understanding of learning how to farm ostriches. While it was not my intention to learn myself, I have picked up along the way little tips of what and what not to do. Learning in a similar capacity to farmers and seeing their interest developed through these different learning experiences has deepened the results of this inquiry.

Results

This thesis is unique in that this is the first instance New Zealand's ostrich history has been written down. While it primarily examines the learning elements of rearing a new type of livestock, the history of how farmers have come this far with this innovative industry is relevant. Most of the information presented in this

thesis is from participants' memories and experiences. Individual memories are not always accurate and thus some of the dates and years mentioned are not necessarily correct. The word farmer is used throughout and is not gender specific.

Conclusion

Qualitative methods of research such as participant observation and interviewing allow the researcher to gain meaning within the context of individuals' lives (Burns: 2000). By attending and participating in experiences like farmers would do I have a better understanding of the lives of the participants (Burns: 2000). Participant observation was the most useful research method because it involved interacting with farmers and experiences of the types of learning styles that they are familiar with. Interviewing participants, attending a field day, the annual conference, a slaughtering session and working on a chick rearing farm all deepened the researcher's understanding of how the industry works and how farmers can learn to successfully farm a new type of livestock.

Conclusively, the research that has emerged from the field work in this thesis argues that farmers learn how to farm in a new industry by talking and utilise a combination of informal learning strategies through Association events, that promote social interaction, to upskill its members. Through Wenger's social theory of learning I link the ostrich industry's experience of participatory learning to demonstrate how this strategy works for this particular group of people. The thesis is divided into three data chapters that examine the history, the current industry and the learning strategies ostrich farmers have employed to produce ostriches. All chapters build up to answer the key research question of how

ostrich farmers learn how to farm. In chapter two I investigate how the history of the industry has shaped farmers' learning strategies.

CHAPTER TWO

HISTORY OF OSTRICH FARMING IN NEW ZEALAND

Introduction

The aim of this background chapter is to identify the important events, structure and relationships that exist within the ostrich industry. This is the first concise recording of the short ostrich history in New Zealand that began with the first shipment arriving in 1991[2] (see appendix six). Secondly, the history shows how social relationships among the players in the industry have helped shape each others' learning experiences, to be developed in chapter four. Shortly after the initial importations of ostriches a few farmers established the New Zealand Ostrich Association (NZOA). NZOA was fundamental to industry direction and survival until around the year 2000 when New Zealand Ostrich Export (NZOE) began exporting. Membership of the Association and interacting with NZOE players have enabled farmer learning for the ostrich industry. The South Island industry is unique in that there is only one full time ostrich farm (owned by NZOE) and all other growers run ostriches as a sideline to other livestock and usually full time off-farm employment. Because farmer learning has changed over time it is significant to understand how a new industry and its farmers have dealt with and attempted to build an industry structure to greater ensure sustainability and viability. The way

[2] This year (1991) was stated by a farmer as to when ostriches first arrived in New Zealand, however another source said May 1993. There are discrepancies between industry players.

players have farmed ostriches from the industry's beginnings to presently, means many have had similar experiences of learning how to farm better. This history chapter on the New Zealand ostrich industry summarises how production has changed over time, how industry players have adapted, NZOA and NZOE beginnings and descriptions of their role and purposes for the South Island ostrich industry.

Early History of Ostriches in New Zealand

During the early stages of talk of ostriches coming into New Zealand around 1990, emus were also being introduced. For possible buyers there was a waiting list even before the birds arrived in the country. For emus, the waiting list was two and a half to three years and at this time the waiting list for ostriches was shorter because not as many people were as interested in purchasing ostriches even though they seemed to have a better return.

Ostriches first arrived in New Zealand in November 1991, after farmers based in Rotorua attracted other farmers and investors, which made importation viable. The first consignment contained 40 eggs and 12 live chicks; some came from Zimbabwe and more were collected from England and Canada on the way. Initially they were in quarantine for three months before they left their country of origin and they were placed in quarantine for a further three months on arrival in New Zealand, in Rotorua.

During the quarantine stage, buyers could visit Rotorua, and the quarantine station was set up so visitors could view the birds through a window. The 12 chicks died within three months of being in the country, mainly due to lack of knowledge of how to care for the birds at that stage. During this time, there was a huge learning

curve for all those involved as information on how to care for the birds was scarce. The next importation in July 1995 was of live birds.

There were 10 interested farming couples in the beginning who were involved in this venture. The early people in the industry paid thousands of dollars for their birds, some up to $65,000 for a pair. Most farmers thought their initial investment in the ostrich industry was medium to high. The first birds farmers reared on their properties were the offspring of their breeding pairs. In the beginning, the farmers and investors were trying to raise chicks, so the industry could be established. This was known as the breeder phase, which lasted until 1998.

In the first three years of the birds being in New Zealand, there was a considerable amount of learning and the contact between a farmer and those on the farm in Rotorua was intensive. Everybody was learning and had stories of success and loss to share with each other.

> There was a period of time where we could go to Rotorua and learn from the guys up there and then well they didn't produce as well as they had hoped so the number of birds we were receiving at any given time we only had small numbers. So it was reasonably easy to learn about the birds just handling small numbers.

The North Island company, known as New Zealand Ostriches Ltd, was the first group to import ostriches. Another group of farmers in the South Island called Ostrich Breeders North Canterbury was a separate enterprise that began importing in 1994. Eventually the two groups amalgamated.

During the breeder phase, farmers with birds set up businesses on the farm and advertised livestock services, such as

the sale of birds, share farming, and ajistment packages (where farmers own the land and farm the birds for investors) for investors and farmers. These were abundantly advertised in publications like the *NZOA Journal* and later *Ostnews*. The income from the advertisements made these publications possible. Advertisements in these publications also included products and services, such as hoods, incubation and transportation.

Transportation of birds nationwide was common. Specialised ostrich transport handlers had successful businesses during this time, as birds needed to be transported from Auckland to Invercargill. Birds were primarily moved by trucks adapted for the ease of loading ostriches and emu (Brown: 1999).

In 1995 membership numbers to NZOA increased to just under 200, which meant the Association had finance available to deal with current issues like recruitment of farmers and investors. One initiative was the establishment of an 0800 telephone number that interested parties could ring to further their inquiry about becoming involved in ostrich farming. At the AGM in Rotorua on June 25th the Association was renamed NZOA. During 1995 the first volume of the NZOA newsflash was circulated and included membership issues, such as breeder's certificates, upcoming field days, MAF issues and a president's report. Meetings of the executive were held in Auckland because the president lived there. Executive members were eligible for financial reimbursement from NZOA for their flights to attend meetings.

In 1996, the Association began investigating the possibility of commercial ostrich slaughtering. One issue they came up against was the Meat Act (1981); this is discussed later in the chapter. Slaughter plants responded to NZOA inquiries saying they could not slaughter ostriches because the Act does not make provision for ostriches to be processed in a meat plant. Some then pursued the avenue of enquiring to poultry plants since ostriches are birds, but

to no avail. There was an estimated 3,600 birds in New Zealand, of which 450 were hatched from eggs laid in New Zealand. Importation of eggs and live birds still continued however; one importation in the winter/spring of 1996 resulted in an administrative ban by MAF of live imports. The first issue of the *NZOA Ostrich Journal* was produced in the autumn. It included many advertisements and articles like farm profiles, basic chick rearing information and information from vets. Association members and vets wrote all the articles voluntarily. The journal was a very positive portrayal of some in the industry, mainly North Island farmers, but did not offer many solutions, or offer discussion of real problems farmers were experiencing with the new livestock. On 18 July, the current Prime Minister, Jim Bolger, and his wife visited the farm in Rotorua to see where the new industry began. He praised the innovative farm and farmers' ability to diversify to stay competitive in the global marketplace (NZOA: 1996, Spring).

It was not until February 1997, the first processing of ostrich meat for the domestic market took place at Lincoln, organised by some enterprising members of the North Canterbury Branch. On 12 March, New Zealand ostrich meat was served for the first time in a restaurant, the Chateau on the Park in Christchurch. The restaurant paid $70 per kilogram. In mid 1997 the Ostrich and Emu Standards Council (OESC) was established in Wellington, made up of representatives from the ostrich and emu associations, processors, marketers and MAF, and was chaired by a staff member from Massey's Faculty of Technology (MAF: 1998). Its aim was to develop industry agreed standards for slaughter and processing. As the processing plant in Lincoln became available to all farmers with finishing stock, they offered a schedule of $11 per kilogram, trimmed carcass weight for birds over 60 kilograms, and $7 a kilogram for birds between 40-60 kilograms. NZOE, the South Island export company, was also established in 1997.

The cost of birds was high and their chance of survival was low. In the beginning, the industry only serviced the domestic market by selling progeny of breeding stock, as there were not the numbers of birds for export, nor was there a marketing company which would establish overseas markets. The industry remained small in numbers of birds because there was much to learn for many farmers, as well as cost and internal problems within the industry. The industry was very buoyant as there was so much potential for farmers to profit from the variety of ostrich products. Many farmers and investors risked high initial investment and believed in their ability to upskill quickly so that their investment would reap the possible returns. Some birds farmed today were originally purchased during the high price phase.

> You'll find that a lot of those people in the early days of the industry got burnt badly. I've got birds now on my property that people paid $25,000 for. They're never going to recover paying that sort of money, that's just normal sort of business.

> When you start looking, there were at that time a lot of um, newspaper articles about birds and what people were paying for them. Like they were paying anywhere between $25,000-$40,000 for a bird and that there, and that's a lot of money it's ridiculous.

The price of birds has lowered over the years as numbers increased and demand dropped, and profit is possible - realistic in the sense that the risk involved in investing is reduced. High prices and farmers supplying breeding birds to new farmers define the breeder phase (Durieux: 1992). New Zealand's breeder phase was a time where farmers were paying non-commercial prices for birds. This lasted from 1993-1998, until breeder prices crashed.

> There was a lot of things that went wrong, there was a big learning curve, people weren't too sure what they were doing and some hit the jackpot and some didn't. Those that didn't fell over and started to bad mouth the industry that it was a hopeless outfit.
>
> People that went into it making quick money, that didn't come quick and the work is very hard and nobody is terribly keen on hard work.
>
> People try to make a way of making a quick buck and I think a lot of ostrich farmers have done that within reason.

Initially those who lost on their ostrich investment were the 'Queen Street farmers'. Queen Street farmers are those who invested heavily in ostriches because they were 'trendy', usually via ajistment. Ostriches at one time were the next 'big thing'. Those farmers who offered ajistment made something out of ostriches but not necessarily those who had invested in the birds themselves. Current ostrich farmers have birds on their property that they have bought off, or were being given away by farmers who had made a considerable investment and never reaped the returns.

> So the man that had them before did not feed them properly...One of the birds that we had here that we had got for nothing he said he paid $15,000 for that bird.

Ostriches were very expensive, because they were so hard to keep alive through to that stage in life. Prices became more realistic after the market crashed in 1998/1999. The farmers who entered the industry after that time paid more like $350 per bird. Today it

is difficult to say how much a farmer could expect to pay for a breeder because there has been no demand for live sales over the last two years to ascertain the value.

The newness of the industry and early bad press made some farmers cautious about entering. Some of the articles in farming magazines about the industry discuss the 'Queen Street farmers', who simply invested in ostriches to make money quickly and when the high returns never eventuated they began bad mouthing the industry. Also reports from ANZ and investment advisors stating ostriches or emus were unwise investment options because they are typical of boom and bust cycles (Topless: 1998), did not aid industry development. Many people in the early days were investing in ostriches with the expectation of making money fast, which some did, but many more did not. After the industry crashed many investors turned their interests elsewhere, which left the industry with full time and lifestyle farmers to carry on the pursuit of creating a successful and profitable ostrich industry.

The New Zealand ostrich industry has collapsed twice, first in 1995 and then again in 1997/98. The people who have stayed in the industry during all this have experienced losses.

> We did have one season where we were landed with a lot more birds than we would've liked because they couldn't find people to finish them and that was just a disaster.

Initially there is potential for niche products which pushes up the prices of a new product. While the industry has had a rough road for many getting started, it is similar to other new industries such as deer and kiwifruit which also went through difficult times.

> There's a lot of funny things go on when industries start. The deer industry in New Zealand was no different. People were

paying big money for the stags and hinds and of course, the bubble burst.

The last recorded importation of ostriches into New Zealand was in 1998 and membership of NZOA peaked at 357. Exporting companies both in the North and South Island began to seriously organise themselves, and develop export protocols for different countries. NZOE in the South Island set up Ostex, and they exported their first shipment of hides in 1998. However, the big company in the North Island, that many farmers throughout the country had belief in, was Ostma. Ostma organised the sale of New Zealand ostrich meat into Big Fresh supermarkets on 3 December 1998. Also in 1998 the *Code of Recommendations and Minimum Standards for the Welfare of Ostrich and Emu* was produced, which meant farmers, processors, and all involved with ostrich growth and movement, now had minimum standards to abide by to ensure quality assurance and stock management.

Over time, with more people investing, the communication between players in the industry was mostly replaced by secrecy, which inhibited the expansion of the new industry. There were limited places in killing facilities for ostriches to be processed and the small demand for ostrich meat on the domestic market created a situation where there were advantages in not telling others 'your secret' for producing live, heavy and healthy ostriches. Farmers were constantly trying to 'get ahead' of the next ostrich farmer. Some farmers when asked for advice by other farmers would not tell them the exact truth.

In the early days, it was really probably getting the information in the first place and disseminating what was right and what was wrong and that was sometimes quite difficult. There were some people that were in the industry that

> weren't going to share information. I just couldn't believe it, but you know you got to know who those people were and you just didn't bother asking them. You made sure you got associated with people like...who were willing to help, because they saw that's the way that the industry is going to grow. That was probably the first hurdle that we had to overcome.
>
> This was the mentality, yes it doesn't make sense but that's how it was because you know, like if I can grow my birds up fast and that there then I'll get them away to slaughter and you'll be left with yours. Right so I'll get mine away and I'll have good money…In the early days it wasn't, it was like a secret society people didn't wanna tell them because then you might have an advantage over me and that was sort of the mentality.

This secrecy between farmers lasted for years, even after the space in the slaughterhouse was no longer an issue. This not only contributed to giving the industry a bad name, but some farmers followed this wrong advice and struck disaster. Farmers just learned to be wary of those who were not willing to help. However, these conditions were not helpful or enticing to new members and this is one reason why many did not succeed and subsequently pulled out of the industry in earlier years.

After the breeder phase ended in 1998, the numbers of birds ready for slaughter soon exceeded domestic consumption, which meant creating exporting opportunities became crucial to the survival of the industry. In 1999, NZOE realised they would have to enter into production themselves to increase production enough to meet numbers required for sufficient export of New Zealand ostrich. During March, the original ostrich farm in Rotorua went into liquidation. The Ostrich and Emu processing standard was signed

and launched by the Food and Fibre Minister, John Luxton, on April 19, which set out the regulations for slaughtering birds for human consumption. NZOA was a well established Association with an increasingly effective infrastructure being put into place to regulate the innovative industry. Although membership was down to 284, the executive believed the future of the Association depended on becoming a professional body. NZOA was taking steps such as deciding not to renew their membership to the International Ostrich Association (IOA) because they were not receiving enough benefits to warrant the cost. They committed funds to Ostrich and Emu Standards Council (OESC) to help establish export protocols. At the annual conference in Hastings, the Association launched the NZOA meat brochure, which included the national heart foundation approved tick (see appendix one). NZOE exported their trial shipment of meat to the Netherlands, which was well received. The new Animal Production Act 1999 came into effect on November 1, which was an updated version of the 1981 Meat Act. The new feature was that it covered all animal material, the major implication for the ostrich industry is that ostrich slaughter is now covered by the Act and ostriches are required to meet an animal product standard. This standard is based on the strictest overseas market whether they are being exported there or not.

The year 2000 was a prosperous year for ostrich farmers in terms of ease of selling their stock for reasonable return, especially those dealing with NZOE. The schedule offered an average meat price of $16.75 per kilogram. NZOE's ability to organize the product ready for export became apparent, with the second trial kill at Clover Exports in June and the first shipment of 500 kilograms of ostrich meat leaving Invercargill for Amsterdam on October 19. In December, protocols for the export of ostrich meat into Europe were adopted and further export commenced. Prices of birds became

more realistic; proven breeders were selling for $400-$700 per hen and a 40 kilogram chick was worth about $150.

In 2001, particularly the North Island farmers experienced hardship and many exited the industry due to Ostma, the North Island marketing company going into liquidation. Although in June, the first export accredited processing plant opened in Fielding, which could process 150 birds per day, it was not enough for some farmers to stay in the industry. Membership numbers almost halved between 2000 and 2001, partly because of Ostma, and some farmers had trouble adjusting to bird prices. They were receiving $300-$400 for a bird instead of the $3000-$4000 they were expecting. Some farmers were not making the sort of money they were used to and therefore exited the industry. The Association received a $93,000 grant from the Sustainable Farming Fund for research. Although the Association has since gone into a decline because of falling membership numbers resulting in a reduction in frequency of field days and publications to members, the farmers involved today are passionate about what they do and believe the industry has a future. Since 2001 North Island and South Island farmers have been separate in terms of exporting. NZOE has driven South Island farmers' experience of the industry which has been more successful than North Island farmers' experiences of exporting ostrich.

Many people have been in and out of the ostrich industry over the years and all have differing experiences of the industry at the time they joined:

> When I first came into the industry one of the things that I thought that was not quite right in the way that the industry was structured was that people had breeders, people had incubators, people raised chicks and people finished. So the same person did all those tasks and that meant that they

were really tied to that job for the whole year without a break.

When I joined it was just getting out of the bad time because that's when they were just starting to get it going again from really the main ostrich industry collapsing. So it was, you would say, starting at a good time and it's been carrying on good ever since.

But over the last three years or so with the industry being around for a while now people have started to get on top of some of the theory and it's now happening in practice. So we're actually starting to achieve the results we initially thought would happen 10 years ago.

Newer players I interviewed in the ostrich industry have an almost opposing view. There has been a turn around in the industry from about 2003 and many within have realised the need to share ideas and experiences, 'the people that are about now are very quite sharing with information'. Also many farmers who once made it difficult to learn how to farm ostriches well have since exited the industry. Many consider that sharing ideas benefits the whole industry. 'The way that you're going to expand an industry is for people to swap ideas and learn from each other and together grow the industry'.

In the Mayell and Fairweather study of *Success Factors in New Land-based Industries* (2000) they conclude that ostrich farming is unsuccessful in New Zealand. Ostriches are not a new product to the world, but they are a new product to New Zealand. Mayell and Fairweather had 56 necessary conditions for the success or non-success of a new land based industry (2000, 47). They identified factors that contributed to the ostrich industry struggling, such as

lack of professional employees in the Association, and that the Association has limited functions, limited research and development, low current finance, and the industry has no export markets (Mayell and Fairweather: 2000, 48). Some of these elements for failure have changed over time, such as in 2000 the first shipment of meat left for the Netherlands, and there has been exporting ever since. Additionally, the Sustainable Farming Fund grant in 2001 enabled research and development within the industry. On the other hand, the Association's finances are increasingly limited due to diminishing membership numbers. It would be difficult to say whether the ostrich industry would still be considered non-successful using Mayell and Fairweather's criteria, because the export company has so much influence over the direction of the South Island industry, rather than the Association.

Stevens' (pers comm. 2005) report on the maturity of industries and their associations outlines a four-stage model starting from pioneers to maturity. The ostrich industry and the Association are still in stage one because the Association has been formed by a group of enthusiastic individuals who want to see the industry grow. This means members are attempting to constitute 'best practices', as well as evangelise benefits of the Association to non-members. Both these reports use models which suggest that the ostrich industry is not performing as well as other new industries, such as deer and mussels, considering the number of years it has been in existence.

Farmers who have entered the industry more recently receive the benefits of joining later, such as hearing others' experiences and not being as susceptible to large financial losses. People who used to be involved in the industry can pass onto others their experiences:

> We've talked to a lot of people in the ostrich industry including the people who have given up, including one man, I don't know if I should say this, shoot the b's and put them in a big hole, that's all they're good for. So a lot of people have been severely burnt with them, but I think that the industry is getting itself together a lot more.
>
> But it's got such a bad history, you'd have to say there's a question mark there.

At one stage, it seemed ostriches were not viable, as some farmers were losing money.

> It came to a point where the industry, it was debatable whether it was going to make the grade or not so we made a conscious decision then that we wouldn't put any more money into the business. So the profits we made funded the following season's chick rearing and any capital improvement we wanted to make. Luckily for us and the industry, the following season was reasonably good to us and we made some money to carry on and that's how we've dealt with it the last years. It's whatever the birds make determines if we will stay in it or not because it got to a stage, you were just pouring money down a big hole in the ground.

Some farmers have taken losses with ostriches. One farmer said he received a tax relief due to losses, so it was not all bad. Farmers who continue to stay in the industry, despite their losses believe there is light at the end of the tunnel.

> But of course to get that return that we thought was there has taken quite a while to come through. At this stage of it

we wondered if it was a wise move or not, but we've stuck with it and hopefully it's turning the corner.

Others do not wish to endure losses and would rather exit from the industry before that happens to them.

The way they're marketing them is far tougher and we won't be farming them next year. We may have a few for interest but we won't have lots like we will this year, because the money's not there. The schedule is very shaky, what they're doing is very tight. I mean unless they can come here and pick out our best birds and get us the top price on the schedule we're not going to get any of the return like we did last year.

Farmers who have recently joined the industry have heard stories of other farmers investing a large amount of money to begin with, in times when they themselves could not see the value in paying huge prices.

But no, we didn't know a lot about them and the industry that we knew a way way back people lost an awful lot of money with them and we would never have entertained investing big amounts of money in it. But when we found what we needed to outlay to do it, it was certainly worth it, and it was worth it, we did make money out of them in the first year.

I mean that's where a lot of people lost a lot of money in those early days because they were paying exorbitant prices for birds, it's not feasible. An animal is really only worth what it is on the hook.

Over time in the ostrich industry prices to purchase birds, and prices received after slaughter have decreased. Farmers who have been involved in the industry have experienced many changes and those who have stayed in have overcome and adapted to the changes over the years in commercial ostrich farming. This early period in the ostrich industry marked a large learning period for farmers because ostriches were a new form of livestock in New Zealand. Many other niche industries in New Zealand have experienced boom and bust cycles such as llamas, alpacas and tree crops, but farmers who have stayed in and achieved returns are the basis for articles in association magazines such as *Small Farmer* and *Lifestyle Farmer.*

Although not all farmers join the Association to enhance their ability to farm ostriches better, many have and thus outlining the Association's history includes experiences many farmers throughout New Zealand have had. Some of the key events and turning points in the industry's history suggest than an ostrich farmers' learning requirements have lessened and changed over time. Farmer learning which has primarily taken place through informal learning channels has been the path for the ostrich industry. The major implication of this learning strategy is that the knowledge is passed on as a result of an individual farmers' network, therefore knowledge has been lost due to farmers exiting the industry. As such farmers have adapted their Association's structure and outputs in an attempt to better provide for its members.

New Zealand Ostrich Association (NZOA) History

The 10 people who were originally involved in the industry started the New Zealand Ostrich Association, then called New Zealand Ostrich Farmers Association (NZOFA). During that early learning stage, they had regular meetings in Rotorua, where the

majority of the birds were at that time. Farmers used to have two-day meetings there where they stayed over night and flew home the following evening. After 18 months of meetings in this form, the Association held the inaugural annual general meeting on January 23, 1994. Members all helped to set up procedures, the constitution and other formalities of a new Association. Meetings continued to be held in the North Island for a few years because the president lived in Auckland and the North Island branches of the Association were strongly active and numerous. The Association in the early days offered many field days and learning opportunities for farmers, because so many were trying to make money from ostriches and everyone was new:

> everyone was trying to help everyone as much as possible, so we all could learn as quickly as possible. There was also local Association branches which were quite active back then. There were people there you could phone to see what experiences they were having and that.

In the early days, there were 'probably 300 members in New Zealand'. However, in the past few years there has been a major decline and 'now you'd be lucky to have 40'. Membership of associations is especially important in the early days of an industry because it enables the industry to develop systems, and initiate research which can only be achieved through subscriptions. I now outline the benefits for an ostrich farmer to join the Association.

Membership to New Zealand Ostrich Association (NZOA)

The Association has always looked after its members to the extent that it offers support, help and learning experiences to farmers. When farmers join the Association, they receive:

- Field days and discussion groups
- A copy of the New Zealand Ostrich Industry Manual
- Technical information
- Regular newsletters
- Chance to meet and work with others in the ostrich industry
- Advocacy to government and other organisations
- Access to the members-only page of the website

They may also attend the

- Annual National Conference

In addition, they benefit from:

- Research and development
- Joint project with MAF to determine the normal level of trace elements needed to achieve good ostrich production.

The website makes membership seem an attractive option (www.ostrich-association.co.nz)[3].

Most current members of the Association joined as soon as they decided to farm ostriches because they wanted access to relevant information about ostrich farming specifically in New Zealand.

> We joined straight away as soon as we got into ostriches; so that we could find out information about them really is why we joined because the Association back then they put out regular newsletters. And it was a way to find out who else was doing it, so that's why we joined. Then I ended up going on the executive for a couple of years and the reason for that is to find out more about ostriches, because being on the

[3] The NZOA website no longer exists in 2007.

executive you end up being in the middle of it. So you end up meeting a lot of people, going different places, so that was good. That was where we got a lot of information.

Farmers realise the benefits of joining the Association, especially since ostriches are so new to New Zealand. Today's members are generally all lifestyle block farmers, which influences some of the content of the information presented at Association events, which may already be known to full time farmers.

Farmers heard about the Association through the farmers they bought their ostriches from, or online.

The guy that I bought the ostriches from told me about the Association. And so I rang up and I got a contact number, rang, found out about it, joined up and of course when you join, you get the information, you get the Ostrich report which tells you that there's going to be a field day at such and such a place on Saturday or Sunday and you roll up. That's how you start to get to meet people and away you go from there.

Probably through, how did we hear about it? I think I found it over the internet, by looking it up on the internet, looking up New Zealand Ostrich Association or something.

The decision to join the Association for most was unquestioned, because it is an information source out there to help farmers farm better. It also gives farmers the opportunity to meet and converse with other farmers, which farmers claim is the best source of learning.

Well we'd decided that we would contribute towards the Association because we thought that there was something to

be got from it by going to the conference and attending and seeing what we get out of it.

Farmers generally pay a joint membership annually, for themselves and partner. Currently the annual membership fee is $175. This enables members to access information and other ostrich farmers with the possibility of one day joining the executive and becoming further involved in current Association issues. What the Association now offers to its members, compared to earlier times, is considerably less, primarily because there are fewer members, therefore less available finance.

> You know like field days are advertised but there's a certain amount of stuff that we do that isn't available to non-members. Not a great deal but there are little bits and pieces and um in time, that will become more the way we'll go with the Association, you know. There's general information out there for anyone, right, but a lot of the finer pastures, what sort of pastures to run, the information about who's doing what and how is really for members only.

Some ostrich farmers choose not to join the Association and have in the past then expected the help of the Association. One example is the wireworm scare. Wireworm is a parasite that crawls into the proventriculus glands, sucks the blood and causes the bird to become anaemic, weak, emaciated and stunted; it is most severe in chicks (MAF: 2004).

> I guess the most recent one is the wireworm situation which was discovered in the North Island. And people that were involved in that weren't Association members and for some reason seemed to think that the Association should be picking

up some of the bills because of the wider implications for all in the industry now that this issue has been discovered.

Farmers who have withdrawn from the Association over time just do not renew their membership. Farmers in the Association then may lose contact with that farmer even though they continue to run ostriches. Joining the Association is an expense and it is debatable what the current benefits of joining the Association are. One farmer viewed the Association as an additional expense that he did not see the value in. This farmer also belonged to other Associations like Federated Farmers. Another farmer commented on why other farmers do not join the Association:

> If you're not making a return then you look at your costs and if you don't think that you're getting any benefits from the Association, it's a cost you could look to drop.

> So obviously, he feels they don't do anything for him. I suppose it just keeps you closer to what's happening in the industry, well it gives you a chance of keeping close to what's happening in the industry.

Most ostrich farmers have been members of the Association at some point. These current ostrich farmers did not question their choice to join the Association and have gained significant benefits from their membership, mostly social. Currently about half of the suppliers to NZOE are not members of the Association, which suggests that current farmers do not see the value in joining the Association in its current state. How the Association functions and what farmers hold these positions may impact a farmer's decision to join.

Association Organisation

The Association has a president, treasurer and an executive of about four members who represent the farmers and provide a forum for discussion.

> The idea of the Association is a single body that will act on the farmer's behalf when you're dealing with government departments and that sort of stuff, right, it's a spokesperson, because each farmer can't deal with it right, but as a co-operative or collective that's where the Association comes in.

The president organises meetings for the executive every couple of months at his home. At these meetings, the executive discuss a variety of issues pertaining to the ostrich industry.

> And one of the things about the executive is the meetings and that there we would have a bit of a natter and you know any problems you were having, you'd just throw it in, bit of a round table.
>
> It's just a good core group of people and it just turned into a real friendly sort of a unit and you could exchange all your different views and problems and ideas and just have a real free for all, it was really good, you learned a lot from it.
>
> You don't get paid for it or anything like that, you just do it for the love of it. It was a just way of learning more and being in with people with the same ideas, or the same interests and trying to make things work and like since we've been on it, yeah it worked out really good.

These executive members are led by the president, and act as a board that organises the publishing, and updating of communication between government and Association members.

> The role of the executive is to keep the channels with government open and also basically keep the information process sharing going. Also it is their role to promote it and keep it going.

The president is the main person whom anyone can contact and he informs them and helps them in the best way he can. In some situations he uses his database of ostrich farmers and may put someone on the phone in touch with them, as they may have more experience in that particular area of concern. If it is a government issue then he contacts the executive members who decide which action to take. The president says that he tries to 'keep the industry on the straight and narrow'.

In the early days, the Association had more to do in terms of helping set up a new industry. Government departments recognise Associations as the means to communicate with the farmer. Associations deal with farming issues and represent farmers at a level where issues can be resolved. The ostrich industry had encounters with government that the Association was involved in:

> Oh in the early stages we dealt with the New Zealand government setting up protocols for importing of birds and importing of eggs. Setting up animal health and welfare protocols with the birds, there was quite a lot of discussion with the Minister of Agriculture and with the animal welfare side of things. Then with MAF to sort out protocols for the slaughtering of the birds and what have you. And then the exporting of the product, getting memorandums of

> understanding for exporting to different countries because it was a meat that hadn't been exported before.
>
> For example, if MAF decided to make a ruling on something, it would be sent to the Association and the Association would then distribute it out, it's a two way sharing of information and that there.

The Association also has a representative on the Ostrich and Emu Standards Council (OESC), which was important in the initial setting up of slaughter and processing standards. Government involvement in the ostrich industry has reduced since the early days because various protocols, such as the welfare standards of ostrich (1998), are now well established.

The Association as a whole body organises and facilitates a large portion of farmer learning. In the early days when there were more members, there was more finance available to run events for farmers to learn. 'Agricultural … associations tend to combine access to experts with opportunities for interaction between farmers and so opportunities for network building' (Kilpatrick: 2003, 162), it has been like this in the ostrich industry. Also over time the Association as a body of people with knowledge has changed because so many current members have been involved for years, their need for learning basic husbandry and management has reduced. The people involved in the industry also have jobs and cannot spend as much time as they would like contributing to the Association.

> Probably to have the people to organise more stuff, more field days, more information sharing stuff, bits and pieces, like you've got to remember all the people on the executive have

> other jobs and all that there and it would be nice to spend more time organising.

The Association is the main organising body, of government interface if any, of field days and facilitating the flow of information to farmers. For small industries the associations are the key vectors for the transmission of knowledge about how to farm. Mayell and Fairweather argue that for new industries to be successful the association needs to have an industry council, extensive functions and extensive exogenous interactions (2000, 48). The ostrich Association includes some of these functions; however, the structure of the industry has changed and is unique in that NZOE priorities, rather than the Association's objectives, lead its direction.

Membership Benefits

Farmers already have expectations of what they will receive from being members of the ostrich Association, because most are, or have been, members of other Associations. One farmer said many members are lifestyle block farmers and membership of associations are more prevalent among these types of farmers. Current members see the Association as an organising body that provides information for farmers. The Association achieves this through field days, which provide farmers with the opportunity to network with other farmers.

> I think it's just a meeting of minds that's working on the same type of farming and it allows you to increase your knowledge or swap your knowledge and keep closer to what's happening in the industry regarding the exporting of the product and all the rest of it.

> Well it's really just within the birds, it was just people that were already in the industry going to field days and things. Because in the early part when the association was quite big they used to have a lot of field days, didn't they? It was really just talking with other people at the field days and just discussing things that have happened to you and they'd say oh no we do this, oh you should try that or … and just looking at different alternatives to make things work better for yourselves.

The Association is there to facilitate the flow of current issues. Most farmers in the Association keep in touch with what is going on by receiving newsletters. Some of the newsletters are from the export company, which are sent out about three to four times a year. The Association generates the others, informing readers of upcoming field days or some get-togethers. Farmers who have been on the executive have felt they were 'really in the know' of what is happening in the industry. Most have gained significantly from the extra time they have put in as a member of the executive. One farmer felt that all he was getting out of the Association 'was two A4 bits of paper with half a page on the first bit and a little bit on the back saying contact me if you want'. Farmers see the Association's role is to provide a network, and organise events like field days where like-minded people can get together.

Association Issues

Farmers claimed that the Association was in decline. Therefore, the most recognised issue facing the Association was membership.

> Well one issue that is facing the Association at the moment is getting people who are in the industry to join the Association so the Association has got some strength. At the moment the numbers that are full members or members of the Association are about 35. Where we feel there are somewhere round about 400-500 people out there either growing birds or involved in the industry one way or another and for the industry to have any strength we really need everybody to participate in it. The biggest challenge for the industry or the Association is trying to get more people to join it.

Current members of the Association try to entice non-members to belong because greater numbers would mean more finance and the Association could do more for its members.

> We try to bring people on the fringes in so that they'll join the industry. We have succeeded in the last 12 months of getting about another half a dozen in. But if we could get the answer to that question it would be very much appreciated. I know it sounds silly but people seem to be sitting out there hoping that other people will do the work that they will benefit from without paying a fee to the Association. We can't work it out why they won't.

Keeping the Association going seems to be a problem that will continue. Farmers will pull out of the Association if they are receiving little benefit from being a member. The Association was integral to the direction of the ostrich industry throughout the 1990s. After 2000 the export companies took over that role so the Association has shifted now to more a support, social and learning means for farmers. This change shows ostrich farmer learning has adapted to the needs of current members over time. The South

Island export company, NZOE, is the company all participants are contracted by, thus their beginnings and current role is important to the survival of the industry.

New Zealand Ostrich Export (NZOE)

Four partners who had an interest in the emerging industry of ostriches set up New Zealand Ostrich Export (NZOE) in 1997. They had a vision for taking the ostrich breeder and investment phase through to the proper commercial farming of ostrich, because at that time the ostriches that made it through to slaughter were sold on the local market. New Zealanders needed to be educated on the product and consequently only 4000 birds were needed to supply the local market (Thompson and Binks: 2001, 44). The supply exceeded demand by 1998. NZOE was primarily established to organise contracts with farmers to supply them with birds. The owners of NZOE saw a need for this niche product to be exported. If anyone was going to make money in this venture, the markets overseas would need to be exploited. The four owners came together and began thinking about how they would run this business. They all had some form of business experience, all having previously run their own. They all assumed various roles.

> We have a managing director which is …, … is our legal person, he's got his own law business, I do the livestock work between the plant and the farmers and … is involved primarily at the farm and the hatchery.

NZOE head office is in Alexandra, primarily because two of the owners reside there.

Once these men started their business they soon realised that they needed to create a marketing arm. Ostex was formed in 1998 to market the meat (under the brand Z'lana), and the skins overseas. The four partners have set up several businesses all under the NZOE umbrella. One is Ostex; another is a big breeding farm they have in Five Rivers, as well as the Lumsden hatchery. All are owned by the same people, but are run as separate businesses to ensure each has a separate profit and loss centre. Originally, the owners had no interest in entering into ostrich farming as a business for NZOE, but as time went by, they saw a need to become full scale.

Job descriptions of employees within NZOE have changed and adapted over time, the main factor affecting this change has been exporting. The owners' roles have changed slightly, as more volume of ostrich has been exported, despite dwindling farmer numbers. The managing director's job currently: 'Oversees the financials, looks after our overseas customers, has to basically look over everyone's shoulder to look at costs, procedures etc, involves travelling overseas 6-7 times a year'. The livestock manager does:

> Government compliance issues, the standards council, livestock coordination to plants, oversees the agents, oversees all the processing at Clover, we are slaughtering every week from October so will be busy right through to July 2006. Farm assurance programmes, at present writing up a quality assurance operations manual. Field days, promotional events etc. logistics for export i.e. organising product from Clover to Coolstores then onto export freight, setting schedules.

The other owners' roles have not changed very much over time, although their jobs have become more varied because of the

development into exporting. Since NZOE began in 1997, the company needed to employ two agents that deal directly with farmers, as well as an office man and woman. The office man helps the owners work out the schedule for farmers.

> There's been a lot of outside money going into the business right from day one because we've needed to develop a lot of shedding and different facilities to get the farming side going properly. So you could say over the first five years of a commercial business we haven't made a hell of a lot of money, because a, we haven't got the numbers and b, we're still on a learning curve. Growers will never appreciate it, but we've kept, we've had to pay growers good money to keep them in business as well and it could be above what we're getting in returns, you know what I mean. So we've had to subsidise the people that are supporting us from a long-term view not a short-term view. It's a difficult balancing act how much you keep for yourself to survive and how much you give to people that are growing for you.

Other decision-making usually occurs just between the director and the livestock manager, since they are 'hands on' everyday. Most decisions involve the managing director.

> Just between … and I that's it. Unless it's real major and we're going to be spending serious dollars doing something we'll often discuss the biggish things even it's just over the phone individually between all of us. If it's just issues I mean there's lots of different issues between what I do and it would just be between … and I it wouldn't even involve the other two. It's not a big deal to them and conversely when they're

> doing something I don't often get involved, it depends how serious it is.

Decisions at the farm or the hatchery involve both the workers and the managers.

All four partners come together for meetings usually two or three times a year, to discuss different issues. These meetings take place so the partners can keep each other in tune with the flow of the business.

Another support mechanism the export company offers suppliers is the agents. The agents are available to everyone in the South Island with a supply contract. The supply contract provides stability for the company, as farmers are contracted to supply birds for five years. The agents visit farmers on a regular basis and they are just a phone call away if farmers have problems. The two agents that look after the farmers in the South Island are busy. They are looking for avenues to encourage new ostrich farmers, although in the last 24 months this has been almost non-existent. The agents are the first place farmers should call for issues and concerns regarding ostriches. One works the top of the South Island, from Canterbury, and the other, the lower South Island[4]. This comment was made by the livestock manager in regards to the agents:

> We used to do it all direct with farmers, all the contracts and now we do it all directly through the agencies in each area. And that gives us and them a bit of autonomy and it shifts a bit of the workload from what I used to do onto them, dealing directly with the farmers. It's a numbers thing, couldn't keep up, too many days on the road, too many days away.

[4] Since field research was carried out the agents roles have been transferred to the livestock manager due to lack of work.

The agents seem to know everything that is going on in the industry. They have an understanding about NZOE's affairs, they run or used to run ostriches themselves and they visit farms that have contracts with NZOE. Thus agents have a comprehensive knowledge of the ostrich industry from a unique angle.

The Hatchery and the Five Rivers Ostrich Farm

The two other businesses that run under the NZOE umbrella are the hatchery at Lumsden and the ostrich-breeding farm at Five Rivers. These are separate businesses but are all owned by the same people. In 1999 the owners realised they would have to go into farming ostriches themselves to achieve enough volume for the export markets they were tapping into.

> We thought well we're looking for land in that same area which is northern Southland and then we went and competed with other people, like it wasn't just us and them. It was dairy farmers wanting it and we had to pay pretty good money back in those days and we bought it, and it was 1200 acres, but that's irrelevant we only needed 100 acres to what we wanted to do then. So we have never utilised it all because its such a big block of land. We've had a lot of dairy grazing and other livestock on it.

The four owners came to an understanding with their bank manager and contributed some of their own savings to facilitate the purchase of the large block of land. Five Rivers is a good location for the farm.

Because that was just a good area to farm, not just for ostrich but just to farm in general the area that we chose, because it's not too wet and it's not too dry, it's sort of in between as a farming area. It's a bit like the foothills of Canterbury where they get a coldish winter but they get rainfall if it's a drought. Having said that there's the odd drought in the area as well from time to time, so consequently in the last two or three years we've put in irrigation as well, which has been a massive task but it's a good insurance policy against drought.

Five Rivers farm is now a massive operation.

Figure 1: Breeder pens at Five Rivers

Originally, the owners went in together and brought some pairs of birds and through others exiting the industry they gained more birds.

They mated and then we incubated them. Some of those particular birds weren't that great, they didn't breed that well.

> We didn't acquire many birds till the market had dropped away and then when we set up our own operation as in farming, as in export company we started buying some of the birds that had lost their value. Got rid of some of the rubbish and that's what we started with. And a lot of people exited once the prices dropped too, or they were investors and they had nowhere to run them. So we ran a lot of those birds for them, we looked after a lot of our early clients, took their birds onto our property and farmed them for them. Then when the returns weren't that great after they'd paid all their expenses we took over the ownership of a lot of those birds, or they sold them back to us.

Currently, the farm employs 10 people; three to four of them are casual and just work with chicks. Two people work at the hatchery full time. In 2006 the big farm had planned to produce 7,000 birds. The hatchery has the ability to expand its operation to produce more live chicks because every year they get better at what they are doing. The future success rate may be 20,000 eggs and 15,000 chicks.

> You've got to remember you've got an infrastructure there, we've got a hatchery, there's big chick sheds you can't just build that over night you have to do it out of production, profitability, you can't just go expanding to do another 10,000 without having the infrastructure to handle it, because it's huge.

NZOE has experienced losses and can expect a disease outbreak, both of which they can learn to farm better from, perhaps by improving their management systems. The company has had

some huge losses over the years because of a variety of failures on their part.

> That's happened for different reasons, we lost them when they've been little chicks, we lost them because they had the wrong type of heat, and I remember when the power went off and birds died. They've had a few disasters, which you will have, because when you've got those sort of numbers you'd have big losses.

While losses are in the company history NZOE asserts that this process has contributed to the success of NZOE today. They are a large scale operation that accept, deal with and learn from differently than a smallholder would. Presently, the largest problem they face is the outbreak of disease. While they can quarantine everything when this occurs, there will still be losses of birds. One precaution the farm has taken has been the hiring of a scientist. Prior to this employment, he owned a laboratory in Invercargill, where NZOE was his biggest client. His work and experience has taken the guesswork out of some issues for their farm as well as others. He is freely accessible to farmers to contact with problems they may face. For example, I rang him one day when the water stopped working, (at the farm where I was working) because I had no idea how long the chicks could survive without water. However, these services are increasingly limited because some issues are commercially sensitive and the company believes that some of their practices cannot be transferred to small-scale operations. One farmer said:

> You'd have to say the main company down south have employed professional, technical people which have taken away a lot of the guess work side of things …So you might say

> it's still trial and error but at least they are coming from a knowledge base rather than just trial and error as such. And those guys are reasonably open to a certain extent, because obviously some of it is still commercially sensitive because that's what makes their business work but they tell you as much as they practically can.

To summarise, the farm and the hatchery have been set up by NZOE, who originally had no intention of entering into growing ostriches on such a scale. Some farmers believe they should be like a pilot farm, and assume the role of teaching farmers how to run ostriches better. While they do have a large operation, some experiments and mistakes they have learnt from could be applied to smaller farms. I now turn to discuss how Clover Exports and their access to markets was originally the best option for NZOE.

Clover Export

NZOE was looking for a place to process ostriches that was close to the big farm at Five Rivers which is the largest producer of finished ostriches in the South Island.

> We were hunting for somewhere to kill the birds in about 1998 or whatever year it was 1997 and we'd approached a lot of places and we'd heard about the horse plant here in Gore. So we decided that we'd approach them and much to our delight they're actually owned by a Belgian company and that Belgian company wanted to export the ostrich meat for us. So it was like a double whammy, a two way marriage there, they were happy to see us and we were happy to see them. Because we got our product straight into the Europe market not long after that. Having said that we'd already exported

> the skins a year before that and we were selling the meat in the domestic market. So Clover, that's where it all started.
>
> Because it's central to where most of the birds are coming from that's it in a nutshell. If Canterbury continued to grow and got up to 4000-5000+ [birds to kill each year] we would seriously look at another plant and we did, we have looked at, but the numbers don't sort of make it work yet.

In the beginning NZOE organised with Clover a trial kill, and as Clover employees needed to familiarise themselves with a new species, they slaughtered one or two. NZOE were fortunate to gain access to further markets through Clover.

> Their sister company which is another brother of their family has got a company in America and we eventually exported into there as well. So it's all interrelated, so that was two contacts that we didn't have to get for two major markets that was the US and the EU.

The cost of killing is the most expensive overhead that NZOE incurs. The kill that I experienced took one morning to put through 128 carcasses, which costs the company and therefore the farmer.

> So say for example Clover, after this kill will send us a bill very quickly for 128 birds at a hundred and something dollars whatever it is per head and that covers all their costs of packing, men, everything. That's our processing and killing fee, plus we pay to get the skins salted and we pay to freight all the product overseas. So there's a lot of cost, there's a lot

of cost in getting things from a to b, it's not just as simple as a few cents a kilogram, sometimes it's a lot more[5].

Figure 2: Main cutting floor inside Clover Exports

NZOE originally paid per bird; though the volume of birds going through Clover has grown such that the more they kill the less they pay. Because of the great amount of product going through the plant NZOE have an advantage when negotiating prices.

NZOE were fortunate to find Clover, a place willing to process ostrich and having access already to overseas markets. Over the years there have been issues with the plant closing due to the loss of their exporting licences.

The Closures of Clover Export

In 1999 the Animal Products Act changed the way meat safety standards were established, implemented and monitored in New

[5] All that was revealed about the killing fees, is that it is expensive. However, for North Island farmers it costs approximately $120 per bird.

Zealand (Bain: 2001, 3). MAF introduced risk management programmes (RMP) which ensure government meat inspectors construct judgements about the performance of the meat industry operators from an objective scientific base. Individual meat industry operators are responsible for establishing and maintaining food safety standards which meet the government's risk management standards (Bain: 2001, 12). Clover Exports implemented standards that were then monitored by MAF veterinarians and meat inspectors. From what the export company said, it is apparent that Clover Exports had problems with maintaining their RMP, which infringes upon the Animal Products Act.

Over the years that NZOE has been involved with Clover Exports, their plant has had issues with remaining open due to management not keeping the plant up to standard. Clover Exports lost its exporting and domestic licences during government audits (Cutt: 2004). The closures at the plant have not promoted security and stability in the ostrich industry, and some players exited because of Clover closing. These closures happened within the last 24 months. Clover went through a couple of new managers during this time, which was one of the reasons why the plant kept closing. Management is responsible for getting the systems right and keeping to the regulations, such as hygiene.

> What you've got to remember is they lost their US license first, right, and then they lost their export license and then they lost all their licenses. They went through a progression of losing all their licenses because they had so many different things they needed to address and wouldn't address them. At the end of all those sagas and losing all these things it carried on for a few months. Then they were only out of operation for a few weeks and then they had to start at scratch again,

> because in the meat industry, they have a scale where they go from zero to six and they had to build back up to zero and that took a really long time.

In reaction to the plant closing, NZOE had to decide which direction they would go in terms of support for farmers. With the initial closing, the export company offered the farmers a reduced price for their product. Some farmers left the industry at this point. The following closing, they paid out as normal.

> Double whammy, you don't support them, if we don't make a loss say some of those months and support those people they won't be there next year. But there's a fine dividing line you've got to be careful with how much we prop it up otherwise we could go down and then nobody's got an income.

> After they closed we still bought birds and held them. So people that had stuff ready we still bought them off them during a lot of that period because we knew that it was just going to be disaster for some of them, we bought and paid for them. So we're good guys.

One farmer commented that he was stuck with birds that were ready for slaughter for much longer than he would have liked. The returns the export company were offering were not as good as they could have been. Some farmers would have lost money on some birds during this time.

> This is the worst part of it, it only affected the people that didn't have their birds ready before the end of March. Because most of the problems were after the end of March in

> that particular year, so the people that had all their birds left after the end of March, which were your poorer performers, got hit the hardest. So it was a bit of bad luck. Whereas some of the best farmers had all their birds killed before the troubles set in. It was terrible the way that it turned out but I mean that's just the way it is.

The plant closing only affected those who finish ostrich. Some farmers left the ostrich industry during this time, as they perceived ostrich farming to be a greater risk than they were willing to take.

> It wasn't just that, that incident along with other people's problems was the instigator for say three or four reasonably big chick rearers in Canterbury leaving. But you can't pin point the plant as being the total reason why, because it wasn't. Some people say that, but it wasn't, it was some people's personal situations which weren't good and some people's finances weren't good and some people's systems weren't good and some people's losses weren't good. There were lots of other reasons why people exited not just because of Clover.

The plant closing was not good for industry, not good for exporters, current farmers and future farmers. Clover closing put further risk into the equation of finishing ostriches. The plant only closed once in 2005, again for minor breaches in standards. However, according to the export company because there is good management in place currently, stability can be re-established in terms of slaughter. The export company believes that Clover was a good choice because they were able to export immediately though Clovers access to the European markets.

Exporting

NZOE pioneered the exporting of ostrich in New Zealand to the European and US markets, because they knew the demand from the local market would not sustain the number of ostriches ready for processing. Hides were exported first in 1998, followed by the meat in 2000.

After recognising the need for exporting ostrich products, protocols needed to be established because ostrich was a new product. In the late 1990s between 10 and 20 birds a week were needed for processing to supply South Island restaurants. As bird numbers of between 2000 and 3000 were surviving through to slaughter, NZOE decided to investigate exporting possibilities. Before NZOE began exporting ostrich meat overseas, they were quoted European prices for the New Zealand meat.

> But to be quite honest when we got the prices back when we first did it, I remember saying well if it's going to be this low we might as well just pack up and go home. It was almost abysmal compared to what we were getting in the domestic market. But we needed the export market to get rid of all the volumes that were coming up … It started off pretty pathetic and then after a while it just grew in value and here we are today.

Aside from numbers of birds and where to send them there are other issues with exporting new products.

> The standards council[6] was set up primarily to interface between industry and government. The standards council

[6] The Standards council is a national organisation with legal accountability which is responsible for the development and adoption of standards and related products.

> was instrumental in setting up slaughter/processing standards, and starting export protocols. Yes, it was slow in the beginning; however, this is typical of a new product going into new countries, i.e. because it has never been done before, like lamb, beef etc...

The first shipment was air freighted to the Netherlands on October 19, 2000 (Gerken: 2000), ever since then New Zealand ostrich meat has been competing on the international market.

Nowadays the export markets are good, according to the export company. The markets are kept open through the constant contact NZOE has with them; the managing director is frequently in verbal contact with the European and US buyers. The livestock manager continues contact with the buyers so he is able to relay specifications to Clover Exports, to ensure the required orders are filled correctly. NZOE will commence entering new markets once they have sufficient supply to fill potential orders.

> In a marketing sense, we haven't a lot to do as far as forging new markets, although we have got one or two good contacts that we're working on for the skins and one or two for meat that are potential. But when you haven't got a lot of product you can't just go willy nilly firing it all over the world because it's not economical.

They believe having three or four good markets open to them is the best option considering how much product they currently have to export, as well as the possibility of a major export ban imposed upon them. An export ban is more likely to affect nations that are in close proximity to one another, where diseases such as avian flu and foot and mouth can be spread rapidly, compared to isolated New Zealand. NZOE have been the New Zealand pioneers on the

commercial side of the industry by initiating the exporting of ostrich, chilled or frozen. Exporting has been successful for the South Island industry which means NZOE owners are content with the relationship they have with their suppliers.

NZOE's View of Relationship with Farmers

The export company claim they have had a successful history with ostrich farmers. While there have been some farmers who were not happy with the performance of the export company, overall in the view of the export company farmers have been pleased with their work.

> Some say well we're happy with what you boys are doing, we often get. That's one nice thing some people out in the industry have said to us on different occasions, hey thanks guys for doing what you're doing because we wouldn't be here without ya. So the relationship with those people is very good because we've looked after those people and they've looked after us. There's always someone out there that's pissed off that the schedules not high enough, that's farmers. And some always grizzle, they'll grizzle if it's high, low or otherwise, there's always some people not quite doing alright. I'd say in general it's reasonably good, but we have the agents looking after the clients directly, I don't see a lot of the clients unless I go and visit them personally, that's probably once or twice a year.

The export company feels they can best support farmers by providing a good schedule, purely because 'everybody looks at the bottom line'.

> But I think in general it has been pretty good and I don't mean that in an arrogant way. We've communicated reasonably well and been pretty fair on our schedule payouts too, when things have been tough. There's been a lot of time when there's been nothing in it and we've still paid out good money to keep them going.

This has led to some ex-ostrich farmers bad mouthing the industry. Even with the bad mouthing some farmers have still chosen to enter the industry. One farmer interviewed had heard stories but overall it did not affect their decision to farm ostriches. However for other farmers negative reference to the ostrich industry may have greater impact on their decision. According to the export company, communication is the key for taking on board new farmers and word of mouth is the most successful tool.

Farmers Comments on NZOE

Each farmer has a differing opinion about NZOE because each farmer has had different experiences depending on what the industry was experiencing and what segment of ostrich production they ventured into. Farmers are well aware of the huge investment NZOE has made into the industry.

> They see an industry of somewhere around 30,000 birds so they don't believe they can do all of the 30,000 themselves. So even though they could get bigger, they still feel there is a place in the industry for some of us smaller guys and I guess it also gives them a certain amount of security. So if they have any issues on farm, there are other people within the

industry doing a portion of the work. So that still gives them birds to process.

At the same time, some farmers are aware that once NZOE has enough stock running through their own farm, there may not be a place for small farmers as there is currently.

And the reason they're telling you is they've invested so much themselves, is because they have got their own breeding stock. They've invested heaps, they could get rid of all the farmers and still support themselves within reason.

The only useful thing at the end of the day is that it tries to reassure you that there is a market for a years worth of work, that you are actually going to make something out of it at the end of it. Like with sheep and cattle you can guarantee to make something out of it, but with ostrich it takes Ostex to fall over and you're screwed, you've got no other market. You've lost all that money that you've put into it through the year just because you couldn't sell the birds, you know if Ostex fell over. So that's a lot of people putting a lot of trust into Ostex.

There was a time when NZOE may have fallen over due to the prices they were receiving overseas. Nevertheless, they knew if they did not support the farmers in the tough times, they would not be here today.

Farmers have experienced the export company not being forthcoming with information, when they thought they should be.

We don't even know how much they feed them down there or anything. I think that's a shame I think that's what lacking in

> the industry because I think they should be the pilot farm that's telling us what to do.

(The issue of feed is revisited in chapter three). Other farmers say that the export company are looking out for them. They say that the export company should be making more efforts to recruit more ostrich farmers, especially for their own interests.

> The export people are the ones that will look for that because at the end of the day that's good for them, isn't it. The Association certainly can assist, as we have done, by putting on field days for finishers and attracting other people in the area to have a look to see what people do, see if they've got the facilities, can they do it, would they like to do it and try and market it that way.
>
> They will get involved in the process because in the long term the more birds we can put on the ground the more birds we get finished. More are going to go through the factory and the export company and the more money they're going to make. So it's in their interests to assist that process.

One farmer agreed with the export company, that the best support they can offer is the schedule.

> But as long as they're working hard obviously to try and make sure they keep it up. Because they also know that for sustainability in this industry and keeping people in it and having it go forward, at the end of the day, it's the price that the farmer gets is what dictates whether he keeps ostrich or he keeps swans or whatever.

Conclusively, NZOE and farmers are generally onside with one another because farmers need NZOE to make ostriches profitable. Farmers in the South Island can only go through NZOE to sell their ostriches. NZOE makes ostriches profitable for farmers by providing them a good schedule, which aims to keep those already in business and entice new interested farmers to sign up. The following summary of the South Island 2005 season outlines how players dealt with some changes and still succeeded to grow their ostriches and make profit. Although not all farmers agrees the schedule was good.

The 2005 Season

The season began early in July. The export company thinks that the opening of the season is shifting to about the 1st of June. Therefore, chicks that are born this year will be finished by about the 1st of June next year. The big farm down South are planning to produce 6000-7000 ostriches, about 4000 of these they will keep to grow out through to slaughter.

NZOE has a huge influence over the South Island industry. For slaughtering this season with Clover there is approximately 30 finishing farmers plus the big farm down south supplying at least 170 birds a week.

> But at the moment because it's the off-season we're splitting those kills and we're doing 100 or 120 just depends. I liaise with the plant manager and we work it out between ourselves from a profitability point of view from his plant they want 170 and we'll do that from October onwards every week for all the way through well into next year.

NZOE believes the industry is looking positive for farmers, while they recognise that the industry would be non-existent if not for their own ostrich production.

> The industry is going pretty good, it's in rebuild mode you know we've had a bit of a downturn in chick rearing people but I think it's in rebuild and it's going to take probably two or three years before it really hits its straps. Definitely the numbers are on the increase, because we're the largest producer that's going to have a huge influence on the industry. So if we fail in our operation it's going to be very hard on the industry but if we're successful and can produce the numbers then it will be very good for the industry. So there's a lot of pressure on us to perform as farmers as well as exporters.

One concern the exporters asserted was regarding traceability. This issue became known at the 2005 NZOA conference, and the exporters realise the implications of traceability for the whole industry.

> Oh a lot of that traceability thing and the feed thing and the traceability of animals, I will be addressing with farmers and our farm over the next two months. The feed thing not a big thing straight away. The biggest thing is going to be traceability of animals back to the mob of where they've come from. The secondary thing will be going through the feed and making sure we're GMO free and those type of things. It's not imposed upon us yet but I can see it being a market requirement in years to come.

Farmers will have to adapt their management systems to ensure traceability. This season looks positive for current farmers because there is an increase in the numbers of birds being slaughtered.

According to the export company the 2005 season went well, it was a good growth year in terms of bird numbers. The traceability system was easily implemented because of the adaptability of most farmers. Since 2005 the number of birds being produced has been maintained because players know what they are doing.

Conclusion

During the breeder phase farmers had very little information to learn from thus they talked to one another and transferred ideas primarily through conversations. There was great potential for the industry in the early years, which attracted innovative farmers and investors. Early farmers experienced a huge learning curve with ostriches, because they are a different animal that requires different management strategies. The industry was buoyant, and although New Zealand wide, was made up of primarily North Island players.

When the Association was formalised a community of practice was formed where facilitating support, social and learning opportunities to assist farmers have been the primary functions of NZOA. The Association was very strong during the 1990s as membership peaked and individuals involved were enthusiastic about the emerging industry and everyone had a need for learning new skills. Over time, membership has declined, but current members are still passionate about the industry and its future.

Since NZOE has taken over and directed the South Island industry they have formed their own community of practice and much of their learning is commercially sensitive. NZOE pioneered

the New Zealand industry in chilled and frozen meat and has monopolised the South Island industry. Although they have had issue with slaughter plant closures, NZOE has managed to continue to make ostriches profitable for all those still involved.

There are a combination of factors detailed as to why the industry has become another story typical of the boom and bust cycle. The Mayell and Fairweather (2000) report confirms one reason for industry failings, in that the structure of the industry needs continual updating especially in terms of research, marketing, financial resources and industry organisation and cooperation, for the industry to be successful. Additionally, the instability of the industry over the years due to issues with plant closures and with the lack of chick rearers, and the high dollar pushing the price down, many farmers have exited from the industry.

Participation has been key to industry successes over the years. Because many farmers have been involved in the industry for years their learning needs have changed. This chapter has argued that the events, structure and relationships have shaped farmer learning within the industry. I will now look at how the industry currently works and the major learning implications for industry players.

CHAPTER THREE

CURRENT OSTRICH FARMING IN THE SOUTH ISLAND

Introduction

This chapter summarises current ostrich growing practices in the South Island, while also investigating how farmers entered into the industry and why they continue to stay in. Farmers have a variety of ways in which they first heard about ostrich farming in New Zealand and further steps they took to research the industry before embarking on this new farming venture. Currently, farmers choose which area of ostrich farming to specialise in, either breeders, incubation and chick rearing or finishing, which varies depending on their resources, lifestyle and farming goals. I also detail some aspects of my experience on a chick rearing farm. This chapter mentions some of the challenges these farmers have faced with their ostriches, some of which occurred on the farm and were overcome by trial and error. The major issue affecting ostrich farmers currently is figuring out what quantities of ingredients are in the feed that the stock feed companies manufacture, to ensure value for money because pellets are expensive, and whether ostrich farming can remain profitable. This season the export company introduced new finishing requirements as a response to the markets. This has had implications for finishing farmers as they can potentially make less profit from their ostriches than the previous year. The farmers interviewed have stayed in the industry because they see a future; they believe in what they are producing and they

have managed their systems to make ostrich farming successful. Currently some farmers make money from ostriches and others do not. Many of the topics discussed in this chapter have emerged over time as a result of farmers learning their specialised area of ostrich farming and refining their system.

Why Ostriches?

Ostriches are an interesting farming alternative that appeal to many types of farmers; from the interviews, predominately lifestyle block farmers. Farmers researched ostrich farming because they were looking for something else to run on their property for a variety of reasons. For some it was diversification: 'We've always done sheep and cattle so I just thought let's try something different. You know you've gotta try new things in life'. Diversification is a management strategy that farmers are familiar with, because diversifying income generators reduces risk. There is a history of diversification within New Zealand farming, although the reasons for using this strategy have changed over time as a response to the continuing changing face of farming. Morris, Loveridge and Fairweather state 'diversification is seen as a strategy for coping with uncertain returns for agricultural products' (1995, 54). The extent and direction farmers can diversify depends on the cost, time and preference (Morris et al: 1995, 62). Morris et al also notes there is substantial pressure for farmers towards diversification, and if it is achieved diversification may provide financial safety (1995, 72).

Some farmers who usually ran deer were interested in livestock whose prices were not dropping. Many interviewees are lifestyle block owners with limited land area and ostriches offer 'a better return for the acre'. One farmer was looking at the bigger

market picture 'so you know there's always more of a demand for red meat rather than white meat'. This implies that this farmer is more interested in producing the meat which has the greatest demand. Ostrich meat contains the lowest fat content of any red meat producing animal which appeals to current health-conscious consumer trends, therefore further ensuring they will have an outlet for their meat. For all farmers the final decision lay at whether money could be made. 'Oh totally, totally, the idea of making reasonable money out of it was the draw card'.

In 1995, the ostrich breeders in North Canterbury produced a document about the profile of the industry at the time, which included a projected cash flow[7]. They forecast a five-year cash flow based on prices during the breeder phase. Over the five years a total of 115 chicks would be reared, which by the fifth year would bring the farmer a profit of $35,000 (Ostrich Breeders North Canterbury: 1995). For a farmer reading cash flow statements like this, it would have reinforced the main selling point by showing how ostrich returns are profitable because more ostriches, compared with traditional livestock, fit per acre. Making money from ostriches is the bottom line for all farmers, although many said if they exited the industry, they would continue to run some for their own purposes, particularly for private consumption.

The schedule distributed by NZOE in October 2005 (see appendix four) shows farmers should be able to make a profit from ostriches, especially the finishing side of production. Compared to other livestock the ostrich schedule prices are higher and more ostriches can be farmed per acre. Some farmers go into ostriches because they are more viable for these reasons. 'But like then if you look at today's market right, ostrich is providing the best return

[7] This is a pre bust cash flow projection for share farmers on the assumption farmers would run chicks. Beginning with the purchase of two chicks at three months of age for $40,000 in total, $20,000 each.

for your dollar out of all the meats'. Ostrich returns on the schedule indicate that farmers can make money.

> I guess because of the number of chicks or number of eggs they lay per season per breeding pair or trio. So that meant you got more livestock each year than what you'd get from traditional sort of farming. So we're working on the calculations for that. So in hindsight some of the theory of which we were told and some of what was actually happening in practice were quite different.

> I mean venison has just shit itself so ostrich is going to look better to venison. But then you know on paper it looks like the right time anyway.

Farmers can work out if investing or continuing in ostriches is worth while economically. They have their own experience to draw upon as well as others in the industry and the use of the internet.

> Oh because you can, at the end of the day you know what you're going to be paid because there's a schedule that tells you, what you're going to be paid for the ostrich when it's up to its killing weight. With the help obviously of the internet and getting information from other ostrich farmers it's not hard to work out really where those things lie.

> You know the whole chain of it, well your fuel costs, your transport companies, because the fuel price has gone up. It's going to cost more to cart your birds. So the exchange rate actually dictates what you do actually get in the end.

> Grabbing some information out on them to find out really what they're worth, how long it would take to get them up to killing weight, what they're going to kill at, what's the freight cost gonna be and how much are you gonna make at the end of the day. It's all done about money.

While there is still money in ostriches, especially as they are presented on the schedule, the work required to get them 'onto the hook' is immense. The decline in chick rearers in Canterbury is partly a result of the realisation of the tough job of raising chicks for very little return. Chick rearing is less profitable than the other segments of ostrich production due to the intensive labour required, which is not factored into the selling price. The people that continue to farm ostriches do so because they love it, they are challenging, ostriches fit in with their lifestyle and ostrich production supplements their income.

'Getting into' Ostriches

There are limited ways of 'getting into' the South Island industry because there are few players who have access to the Association, NZOE and relevant information. Within these constraints, every farmer tells of a slightly different path. Farmers found out about ostriches in a variety of ways. In earlier days there were newspaper articles advertising ostriches and the money to be made from them. This was the most common way farmers began their careers in ostrich farming, in the 1990s. Others saw ostriches over the fence in neighbouring paddocks, or as they drove past, and others dealt directly with NZOE. Accessing any information or contacts within the industry is difficult presently, because many people use the internet, and websites in regard to the South Island

industry are either non-existent or not maintained. For example, if a farmer was to Google 'ostrich farming', or 'ostrich farming South Island' the results retrieve neglected websites.

Farmers receive farming publications constantly in their mailbox because they have a rural address. In some of these publications, there were advertisements about ostriches, which caught the curiosity of some of the farmers that I interviewed.

> Just read in the paper, it's like a new industry, you learn about these things in the paper and you get curious and say what would that be like should I give it a go and let's just have a look at it.

> The curiosity of them drew us that way, but also the number of stock per acre that you could run was greater than sheep, which would mean on a small block it was going to be more viable you know. Better return.

Others read about ostriches in regional newspapers. There were a number of advertisements during the end of the breeder phase when people were disengaged.

> I have a funny feeling that he advertised in the paper. I have a funny feeling that's how I got hold of him because he'd advertised in The Press to get rid of all his ostrich farming stuff.

> He had young chicks for sale for $50 and I rang him up about them and he said oh they've gone. And he said how much land have you got and I said I've got plenty. Oh, I got some older birds too, I'll give them away to you, so that's where it started.

Advertisements in newspapers captured the attention of the farmers enough to make further inquiries into the industry.

Other farmers watched their neighbour's movements, or looked at other farms as they drove past on their way into town. This interest in what others were doing led some to question those individuals. One farmer's wife saw ostriches in a paddock as she was driving home from town and thought 'they looked cute'. She came home and told her husband; he went to the farm where she saw them, and that farmer put them in touch with the export company. Another farmer heard that someone had ostriches and ended up making contact with him.

After making initial contacts with established ostrich farmers or the export company, farmers decided whether they would make further inquiries. 'Over Christmas I was thinking hmmm at home on our block, I was thinking I'd like to try those birds, have a look at it and try something anyway'. They then rang back their contact to inquire further. Some ended up going to their contact's property to look, and some had the opportunity to handle the birds.

> So we made a few inquiries we ended up going down to see some at …We had a look around, had a bit of a talk, had a think about it. He came back and made us an offer to buy some birds, which we took.

> After a while of dealing with him and dealing with his birds and helping weigh birds and move birds and all that I decided that I was actually going to give it a go. So he then helped me set up and buy my first or he put me in contact to buy my first trio.

After 2000 the more common way of 'getting into' the industry was dealing directly through NZOE; some farmers spoke with the export company who sent someone to their house to discuss their potential options. This person looked at what sort of farm they had, and discussed with the farmer adjustments (financial and land) that had to be made, contracts and what is involved in keeping ostriches.

'Getting into' ostriches can be difficult, compared with the early days when farmers dealt with the Association; however NZOE is currently at the forefront of recruitment for the South Island industry. For some, reading the newspaper and having an interest was their path, for others it was knowing someone who ran ostriches. There is a real sense of 'getting into' the industry because the information and contacts do not exist as easily as for other industries.

Why Deer Farmers can Transition Easily into Ostrich Farming

When deciding to farm ostriches from an economic viewpoint, farmers compare it to other finishing livestock, such as deer, heifer grazing and lamb finishing. Comparing ostriches with deer is useful because New Zealand farmers understand deer farming, because it is a successful new land based industry, and see that the venison market has been in recession for a few years. There are examples within the ostrich industry of deer farmers who have taken on ostriches and achieved a good return.

> At the moment there is very little market there for the deer, worldwide, and unless you can sell your meat around the world you are not going to get good money for it. In addition, there has been a recession in deer at the moment, I would say, a huge recession for more than five years and you just cannot. We have not been buying our deer, we've been

> breeding them, which means that we're not again outlaying a lot of money, but we have been farming them and looking after them and feeding them for very little return for years because the market's not there.

Ostrich finishing has the potential to attract deer farmers because there is profit to be made and they have existing facilities which are ideal.

> Anybody who finishes deer to have some ostrich on their property is going to help them. Because they're diversifying in their farming aren't they, which most farmers do these days.
>
> There's a lot of people out there with small blocks …and farmers where deer's not working, right, and you put an ad in the paper and the curiosity gets to them and they come along.

However, at the same time why are there not more deer farmers already involved in the industry? Possibly 'they're scared, they think they're going to lose money'. More could be interested if the prices stayed as they were the previous year.

> What they did last year with their prices and marketing and the way that they sold them and all. If they'd have done another two or three years at that, they'd have had lots of deer farmers interested in them, because they would've worked well.

On 14 March 2005 an article in *The New Zealand Herald* stated that the ostrich industry needed another 20-30 finishing

farmers for this current season, which could be an outlet for deer farmers 'who have endured lower prices' (NZPA: 2005). Essentially any finishing livestock can be compared to ostriches as similar management practices need to be in place. The deer industry initially began with a greater boom compared with the ostrich industry, and has survived so well that Mayell and Fairweather concluded that the deer industry was in the glamour phase of success (2000, 20) before the current down turn. Ostriches are comparable to deer, not only in terms of facilities needed, but because deer are a newish industry in New Zealand.

Beginning on the Farm

Every farmer interviewed had different resources on their property, which could be used or transformed to accommodate ostriches. Most farmers trialled ostriches but they still needed fenced land and capital. Small block holders are able to convert existing sheds to house chicks. Deer fences, yards and weighing facilities are the ideal style for juveniles, breeders and finishing stock (NZOE: 2002).

> We had an intensive deer farm here which was all done with all the deer fences, the races, the scales, the yards, everything that you'd want for deer, to load them out to go to the works and all, it was all set up for deer, which is perfect for ostriches. Whereas some people have got, say, sheep farms and they've had to put up the high fences and build a special yard, you know with higher sides to handle them. Well you see we didn't have to do that because we had the deer farm here, which made it much, much easier.

> The fencing that we had here at the beginning was adequate but then we ended up putting new fencing to do the job. Since, then we have changed it all again.

The small block holders mostly had to redo their fencing or erect suitable ostrich fencing. Other farmers purpose-built their fencing design for ostriches, after learning to keep a metre wide gap in between each breeder pen, so they cannot attack each other (Kreibich and Sommer: 1995).

> So we subdivided up the land into paddock sizes which we thought were appropriate for the number of birds we obtained. But it was sort of on a basis of when we could afford it as well as when we actually needed it as well.

> I divided it into, I started with, I built three pens, obviously with the thought that yeah ok well I'll start this one and if it looks pretty good well then there'll be another one somewhere along the line. So that's what I did.

For some farmers, the resources their farms already had reduced the initial set up costs.

Before they fully committed themselves financially, most farmers went through a trialling phase with ostriches (for further reading on trialling see chapter four). For those who entered into breeders, some bought only a pair or a trio[8]. 'Not only was it a trialling period, or a learning period, but they were damn expensive at that stage'. Those with chicks transformed existing sheds and with the combination of little knowledge, suffered varying degrees of losses.

[8] Breeders are no longer purchased by new farmers because NZOE can provide the eggs if farmers want to rear chicks.

> We bought a few in the beginning, trialled them out, they didn't work, we lost. But then we thought we can do this better, and once you start making money you reinvest, you learn, hopefully, risk management.

Finishers seemed to take on about 20 birds as their trialling number. 'They're interesting, they're different, they are and so when we got them we really quite liked them didn't we, we thought well hey, let's find out some more'. Each stage of ostriches requires different stages of trialling. Those wanting to rear chicks have to initially invest more in their trial period compared to those farmers who take on breeders or finishers because chick rearing and incubation requires building investment and/or renovation. This means farmers have to learn, through independent research and talking to other farmers, the basic requirements their ostriches need upon arrival.

Current Ostrich Growing

Currently in the South Island, ostriches are farmed in three segments: breeders, incubation and chick rearing and finishing. Farmers tend to do only one part of the process. Over time farmers have found they are not successful at all stages of ostrich production and have decided which part they are best at and which fits in with their lifestyle. 'Like we tried doing the whole lot but the chick rearing was easy'. 'Because the industry has evolved and it got to a point where we all realised, we were trying to do everything and it wasn't working'. This segmentation has come about for some as a risk management strategy.

> For us it's what you call risk management because if birds are going to die, they are definitely going to die within that first six weeks, right. The chance of death after that there between six weeks and 40 kgs is reduced heaps.

But overall the industry has come further as individual farmer skills have become specialised through segmentation. 'I think the industry is better for segmentation'.

> The incubator and getting them through to that period, they make a few wee dollars. And then we make a few wee dollars and the end man he makes a few wee dollars. So at the end of it, we all make something out of it, rather than us trying to do everything and not making anything.

The most popular and cost effective way of producing ostriches is a flow on process where some people own breeders for egg production. They then pass their eggs onto those with incubators, who incubate the eggs for about 42 days until hatching, then raise the chicks to usually six weeks but some rear through to about 40 kilograms. Then another farm takes the chicks and grows them through to slaughter. 'It's just a tree sort of starting at the bottom and working up the scale to the end product really'.

Breeders

Farmers who own breeders usually keep them in paddocks as a couple or a trio (one cock and two hens) for the whole year. Some small block holders specifically organised their land for this purpose. 'So for a small block holder ostrich fit on that reasonably well, like for breeders you can set up a few pens and you've got a breeding facility for egg collection'. Farmers have anywhere

between 20-25 breeders on their property, which they go out and feed every day. 'Well the breeders are getting through a whole 25 kgs of breeder pellets every day'. In New Zealand, individual breeding hens need to achieve over 20 live chicks per season to be profitable (NZOA: 2003). Coming up to the breeding season, feed amounts are intensified to ensure greater fertility. 'So we've really fed them up to try and get the fertility rate up this year'. The breeding season in New Zealand runs from about September to February (Thompson and Binks: 2001). Eggs come every second day in cycles lasting three to four weeks. A good hen produces between 30-60 eggs in a season (NZOA: 2003). During this time, the farmer is: '…collecting eggs, washing them and storing them and then sending them to somebody for incubation and then they will rear the chicks'. Breeders are expensive to maintain because they need to be fed all year round.

> You don't have to have your own breeders to get the eggs these days, because the farm [Five Rivers] will provide them for you. You could buy them from the farm down south, without having to feed all these birds all that, but then if the farm goes belly up. There's not many other places that keep breeders I don't think. I think there's only two or three of us that keep breeders.

The time commitment involved in running breeders consists of feeding out every day or every second day, and collecting and storing eggs during the breeding season.

Incubation and Chick Rearing

Incubation and chick rearing are generally bracketed together, as those who raise chicks usually receive them as eggs

and then incubate and raise them. Chick rearing is the hardest and most intensive part of ostrich farming; intensive in terms of time commitments as well as other costs such as power and feed. 'It's quite a big commitment to do the chick rearing and well you've got all your power costs and obviously they eat, but they don't eat as much, they don't cost that much to feed'.

'Getting into' chick rearing is expensive; setting up facilities and acquiring all the resources necessary for successful chick rearing is costly. Successful incubation seems to occur in shipping containers that have been transformed to hold ostrich eggs.

Figure 3: A shipping container used to incubate the eggs

Figure 4: Inside the incubator

Heating, humidity and egg turning are automatically set. Although existing sheds can be transformed into homes for the chicks, many resources are needed to equip the building for chick needs, such as heaters, draft stoppers, ventilation, and matting for when they hatch. Farmers have generally obtained these resources from people who are leaving the industry.

Incubation takes approximately 42 days from the time of setting the eggs. During incubation, eggs need to be candled (shining a light, like a torch, through the egg shell) every week or fortnightly to determine embryo development (NZOE: 1999). However, from day 38 they need to be candled every day to see if they have pipped internally (when the chick pushes its beak through the inner membrane into the air sack and breathes oxygen). After they internally pip, life begins for the bird inside and they should hatch 12-24 hours after (NZOE: 1999). Chicks are transferred into the hatcher (a room separate from the incubator, still automatically controlled) at this time. 'Hatching is the easy part – keeping the chicks alive is the challenge' (Broad: 1997). After the chicks hatch,

some people transfer them into a brooder (a small area where young chicks are observed, until transferred to chick sheds) where they are kept warm under heat lamps and have access to food and water. Others keep them in a hatcher until there are enough to transfer them to the chick sheds.

'The key to successful chick rearing is observation' (NZOE: 1999). For the first three weeks of their lives, they tend to stay inside the shed, however that is weather dependent. 'They didn't go outside for the first couple of weeks. They're just completely inside till they get warm and up and going and then they're only out when it's really nice'. After they are outside is when the cleaning starts. It is in the first six weeks that most deaths will occur and ostriches become basically 'bullet proof' after they reach 40 kilograms. Death during this time can be from a variety of factors like disease, chills, inadequate nutrition of the breeders and stress.

During this time, there is an immense amount of hard and time-consuming work for very little return.

> But the chicks are quite hard things to make sure that the temperature's right in there, in the area where they are sleeping, that you keep the food up to them, that they've got clean water all the time and that the runs and everything are clean to stop infection.

Diary of my Chick Rearing Experience

I was given the opportunity to work and live on a chick-raising farm for six weeks. This time included the last days of incubation through to the chicks being 5-6 weeks of age. Working on the farm gave me the best chance to see how much hard work is involved in looking after and keeping chicks alive. In addition, learning by

doing which is what farmers do was vital to my understanding of their learning process. Choosing to incubate and grow chicks from one day old requires huge amounts of time, commitment, facilities and balancing it in with your lifestyle.

Since the couple I worked for both had full time employment, they had to have someone who would live on the farm and work with the chicks during the day for this six week period, beginning late September 2005. It was an adventure, I had my own self-contained unit, which was part of their home and designed for temporary workers or Willing Workers On Organic Farms (WWOOFers). They had had many workers over the years stay with them, and help in various forms on the farm. The workers were from diverse backgrounds; this arrangement is most popular with travellers who wish to save money temporarily (Small Farmer: 2003). This is one way lifestyle block farmers can balance the needs of the farm, while they work. One other farmer I interviewed also had similar arrangements, whereby he offers workers board and food and they work on the farm during the day. I had dinner every night with the farmers in their home and this time gave me the opportunity to ask some of the 'stupid' questions, after I had worked on this thesis and cared for the chicks during the day.

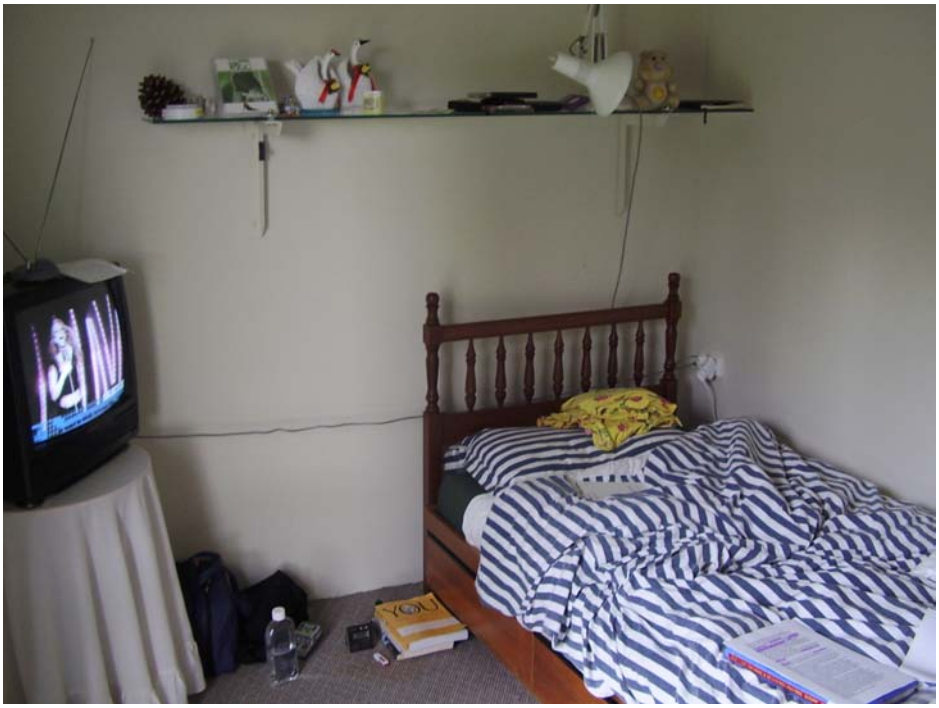

Figure 5: The room I stayed in, set up for WWOOFers

Farm work is usually the done by the husband and woman's farm work is hidden (Morris: 2002,107). However women, as Parker asserts, have a perceived nurturing role, which in her research found women to be 'allotted the task of rearing young calves' (1988, 94). She found that men lacked patience in the example of teaching calves to drink (Parker: 1998, 94). This assumed role of women farmers to perform the nurturing role is another example of gendering in farming.

In ostrich farming the women interviewed were predominately involved in the labour and management necessary for ostrich production at all segments of the industry. Chick rearing is mostly the responsibility of women farmers, while the man's role is the 'helping', hidden role. This is a result of women's nurturing ability and it is commonly known within the industry women are better at chick rearing. This social construction is another example of gendering in agriculture.

I learned a lot about caring for the birds basically, as I went. There is so much that could potentially go wrong, for example,

outbreak of disease, embryonic deaths and power failure. There were so many aspects of incubation and chick rearing that the farmer just did because she knew how and had seen and done it so many times before, however it was all new to me. Each day has its own routine dependent on the stage of the chicks.

While each chick rearer will have their own system because of the slightly different set up, there is one main rule, OBSERVE. This gave me the opportunity to learn for myself, to upskill in an area that I knew basically nothing about. I had minimal prior experience having only handled finishing ostriches. Before I moved out to the farm, I read the NZOA manual's section about chick rearing and Beverley Broad's book as that was all the practical New Zealand literature I could find, that gave a basic understanding of what I was about to do. Being asked to come and work on an ostrich farm was the best opportunity I could have ever wished to have. It is one thing for a farmer to say ostriches are hard work, but now I can say ostriches are hard work with the sigh in my voice. Working and living on the farm also let me see first hand the many intricacies of lifestyle block farming, for example, moving sheep without a farm dog and how people can work and farm.

The location of the farm was only 30 minutes from my house in Christchurch, so I could still do all my town activities, without having to commute too far although it still took time to adjust from having everything about 10 minutes away. I saw how organised lives have to be compared to living in town, where everything is at your finger tips. It was a good experience living out of town for six weeks. There was no traffic, which I was used to living on a busy street. Plus I could walk across to the chick sheds in my pyjamas and the neighbours would not see me. It really was the rural lifestyle block ideal of peace, privacy, tranquillity while still being close to the city (Fairweather: 1993).

I had to learn everything about rearing chicks from the farmers. This happened everyday in various forms and as issues came up (such as the prolapse). I learned how to raise chicks with the system they had in place that they have spent years refining.

Incubation

I arrived a couple of days before the hatch was due to commence. The eggs had come from the big farm down south; the farmers had driven down in a truck to retrieve them. In preparation for the hatch, I was taught what was to be expected from this day on. The farmer candled the eggs to show me each stage of embryonic development. By this time, she had shifted the eggs which were not fertile, and those which she thought would hatch first at the front for easy access[9]. Between the two of us we had to sort out a system that would work so we could both easily know the progress of the eggs/birds. I drew up a chart for when the eggs began hatching, which had information such as date, time and which breeder pen it came from. Unlike the books and the manual that I had previously read, we did not wear gloves or utilise many of the hygiene suggestions. In the first three days, I just followed, and since it was the weekend, there was plenty of time.

I essentially copied what the farmer was doing, when I watched her work around her space. The candling[10] was something that the farmer had done so often; she knew exactly what to look for and had to explain to me the shadowing that I could see. She was so fast at shining the torch on each egg. She also had a system with the eggs, so that those she thought would hatch first were placed in front. I still have no idea of the difference between those which are likely to hatch soon; she has this skill because of

[9] Shifting the eggs occurred several times.
[10] When you hold a torch up to the top, you can see the membrane is peeling away and the beak is sticking through.

years of practice. This time was used for mainly setting up in anticipation of the hatching period.

Hatching

In preparation for hatching, the farmer began candling more often as she can tell if they have pipped, and which ones were close. By flicking the torch over the eggs she was able to tell me that we should not be getting any for another two days. In the meantime, we began organising the rest of the hatcher and the chick shed.

We started off preparing the baskets for the hatch, by putting paper towels in each basket. The farmer cleaned out the separating grates because they had been on another farm. The separating grates are used for the lower shelves in the hatcher and are put into laundry baskets to separate the chicks from one another. They are expecting about 60 birds, which is a reduction from what they had hoped considering the number of eggs in the incubator. When you look at the eggs with the torch, the darker bit is getting larger which means the chick inside is using all the space before they hatch. In the incubator, there is a poster, which illustrates the different embryonic development stages, and what should be expected when candled. Most of them are up to the day 42 on the poster. The hatcher is organized now and everything seems in order, we are just waiting now.

Figure 6: Hatched chick in the hatcher

Then we went across to the chick sheds and I had to wash out the feed containers while the farmer replaced the draft stoppers on the doors. We put down the grates and laid down the new matting so the chicks' feet do not slip through the grates. We tested out the heating. Then we did the same for the third shed, and the middle one we can just walk into to look over at them. We then placed the feed containers in place. That evening the farmer commented that she saw egg movement when she had been over in the incubator.

Over the next 24 hours, there was decent movement that she could see by candling. On the poster for day 42 the chicks are pushing their beaks through the internal membrane, this is called internal pipping. Each egg is at a slightly different stage. Inside the incubator is really warm and she picked up one egg so I could hold it to feel it moving. We went through the process for tomorrow, when I am to go in and check every hour to see what is going on. I am looking for eggshells on the floor, then look which egg it belongs to. Then remove that egg from the incubator and put it in a basket. I must record the egg number, time, and date on

the chart I made up. Then put it in the top shelf of the hatcher. Then sweep up any shell on the floor of the incubator and put outside. If there is any loose shell then I should remove it from the basket, in case the chick scratches itself because it is sharp.

During the hatching period, the farmer got up during the night to check progress and then went to work all day as well. Coming to check every hour is good, just to see how things are progressing. She said I might get about 14 tomorrow, which is great. I also have to chop up some matting to sort out for the bigger baskets because we do not move the chicks over to the other shed until there are 10 or more, so they can be kept warm by each other as well as the heating. They just stay in the hatcher until such time.

From here, it was four days of chicks hatching. Over the next night, two chicks arrived and one was on its way when I woke in the morning. When I went over to check there were two chicks in the baskets at the bottom of the hatcher and one on the top shelf trying to push out. The farmer's mother came over also to check progress as she has prior experience, and to help me in case I had issues. The farmer came home at 11 am. I had to set up some baskets for when the chicks get bigger before they go into the shed. It was a pretty quiet day after that, no more hatches and just really checking every hour. At dinner the farmer said they are expecting snow on Thursday so I will have to keep an eye on them really closely then, because we do not want them to get chilled. She shuffled around the eggs again for the ones she thought would hatch and she put them near the front of the shelves of the incubator. In addition, she thought that overnight and tomorrow will be a big hatching day.

The next morning I went out at 8.20 am and there were eight new chicks in the hatcher; it was so exciting. Then I went to the incubator and there was some shell on the floor so I had to find

which egg it belonged to. I found it and it was exciting, I got to do something. It made a wee squeak as I picked it up and the egg was so warm. I put the egg in a basket and wrote on the chart, time, date and egg number. Then I put the egg in the top shelf of the hatcher. When I was in the hatcher the other eggs were all moving and the little chicks were pushing so hard. I took away some loose parts of the shell. The chicks use so much energy pushing through the shell to break free of it. The shells are discarded because they are all broken; the shell is quite thick. The paper towel in the bottom of the basket catches all the bits of shell and bloody secretions within the egg. This evening when the farmer got home we moved the chicks over to the shed. The shed's temperature was 30 degrees and it was very warm working inside. We put a metal semi circle up so that the birds can keep inside that and under the heater. We gave the chicks 2.5 mls of yoghurt to get their guts working and there are small stones on the mats so they can eat them and get their gizzard functioning. They are very unsteady on their feet and are just under the heater. They all intertwine with each other. There are 11 chicks in the shed tonight and we are now expecting about 50 all up.

Figure 7: The 11 chicks in the shed

The next day was a very busy day between the chick shed and the incubator and the hatcher. As soon as you turn your back, something else is happening. I started the day going to the incubator and there were so many more chicks in baskets that the farmer had done during the night. Oh my goodness. Some were completely out of their shells so I had to move them into the bigger baskets. Then I went over to the chick shed and began playing with the chicks. I just played with the water and the feed trying to retain their attention and get them to eat it. Some were interested; there were only a couple that were a little sluggish. However, there is a lot of time spent there.

Figure 8: Chick pushing its way out of the egg

I came back inside and I was making toast and the power went off. I ran across to the incubator in my pyjamas and rung the farmer at work. The farmer said last night that the chicks have about 30 minutes before they start to become cold. She came home and together we had to carry the generator across to the chick shed. It was so heavy. I had to use my cell phone to ring the farmer's husband because she was not sure which way to plug it in. I saw the power was on in my room. So the crisis was diverted.

We then went back to the incubator and she reorganized the eggs and broke some more eggs. After the chicks have been in the hatcher a while they become dry and crusty so you can crack the eggs a bit more to help them out, because it is very hard work for the chicks to break out.

Figure 9: A manually cracked egg with chick inside that never arrived

There were two eggs pipping at 12.30 when I went in. I then checked all the eggs in the hatcher to see if I can break any more egg off and help the chicks out. When they are sufficiently out I can then peel the white layer off the inside of the egg because it is connected to their belly button. Then they can be moved into the bigger baskets where four are put in each. I then reline the basket with a paper towel ready for the next one.

The farmer came home earlier from work because she wanted to get the chicks over into the shed before it got cold. We wrapped a blanket around the basket and transferred the chicks over to the shed. They all looked happy and there were lots more in the metal semi circle. The farmer taught me how to interest them in the food and water. Just as she said, once one or two start the rest will follow. The farmer put more stones in their pen. We went back to the incubator; the farmer does not want to get up during the night tonight and they are getting to be late if they have not hatched yet. Therefore, we turned the lights off and did some candling. Some are just so tired that they do not have the energy to push out and

they need a hand otherwise they might not ever come. Therefore, she finds where the air sack is and tries to see where they have pipped and then we turn the light back on and she hits that area with a tiny hammer, to crack the egg. Then you can see them as they have pipped internally. We have essentially given them a chance. The rest of the eggs have died an embryonic death or they were not fertilized. We had 53 hatch in total. This farm has a reputation for being good chick rearers and the farmer was asked to speak publicly on chick rearing techniques.

Looking after the chicks

Once the chicks were all moved over to the shed it was easier to observe them. If you sit with them and play with the food and water, they are interested and come to see what you are doing. Once one or two eat and drink, the others follow. Some were pretty dopey and they are so wobbly on their feet. I played with the birds and encouraged them to drink by playing with the water, really, only the stronger ones were enticed toward me. At this time, the farmer expected acknowledgement for her efforts from others involved in this process.

The next day I went into the shed and they were munching on eggshells. The farmer's mother had boiled an egg and smashed it into tiny pieces. In the wild, they eat their own shell but in domesticated circumstances eggs have to boiled because many chicks will be eating the same egg. They are happily eating out of troughs because the farmers took out the ring. We just stood around watching them and they feed out of our hands, which is cool. We hoovered out the hatcher and took down breeder pens and dates on the eggs still in the incubator. That information is then given to the big farm so they can figure out their numbers. That is extra which is not required but she likes to do it, and knows others will not. This is characteristic of being a good farmer (Wilkinson:

1996), by doing extra this differentiates the farmer from any other ostrich farmer. There is one chick which the others pick on because its foot is not spread out like the others. It is a little slow and it is starting to get cold (to tell if a chick is cold you have to feel its legs for warmth) because it is always on the outside of the bunch. It may well die overnight, but its tummy is full.

Figure 10: Recording information from the eggs

Down each side of the chick shed is a trough; on one side it is full of feed, which we must replenish several times during the day and in the other trough is water, but it is inside milk bottles. The small stones are scattered over the ground, which are also munched up. The birds just seem to be constantly eating, especially the stronger ones. They always peck at my jewellery, but I had one sitting on me and the others were all crowding around pecking at my shoes and my clothing, but the pecks do not hurt, yet.

Figure 11: Chicks eating stones from the author's hand

Once they hatch, it is all about eating, exploring and growing. Time is spent just really replenishing their food and water and the stones. The wee chick with the abnormal foot is still alive just wobbling around and the others pick on it. The farmer put some feed on the waterside of the trough which is better because then the weaker ones have a whole side to themselves now. She changed the mat in the morning and she just water blasts it and dries it outside in the wind ready for tomorrow. Tomorrow night we have to clean out the troughs thoroughly because the food is supposed to be chilled and it obviously gets warm in the heat of the shed. But also the feed that the next farmer wants them to be fed needs to be introduced. Therefore, from tomorrow that will be 1/3 to 2/3 of what they are used to and eventually we will mix it so well they do not know the difference.

In the shed, the temperature is still at 28 degrees as we have had a lot of rain today. Also with the temperature being warm, means the birds move and eat and drink more because they are warm, rather than trying to keep warm. They are all eating very

well and even in an hour, the water goes down a lot. I refill the water containers with the watering can. The water in the can is warm, when you go outside to the tap to fill the watering can, the water is connected to a hot water cylinder. They are the only people that they know that do this. It is important to have warm water because it is easier for the chicks to drink, as cold water may be frightening for the birds[11]. The watering can stays inside the shed all day so the water inside is kept warm. The wee chick we were a bit worried about seemed fine today, in fact it took a long time to locate it. The birds are so busy.

During the first week of their life, I have to just watch them and refill water and feed containers. They are inside the whole time, partly because the weather has been average. The farmer took the matting away so they were just standing on the grating, which means we will have to clean out the shed for the first time. We also separated about 14 of the smaller chicks into the third pen of the shed, so they are not being pushed around when they go for the feed.

When we cleaned out the sheds, the chicks had their first opportunity to see daylight and run outside. While the farmer cleaned the sheds with the water blaster, I chased the chicks around the run, to prevent them from standing still and becoming chilled. At this time we vaccinated them above the thigh, because this is what the client, who will rear them next, wanted. Then she water blasted the runs once they were inside again to blast away the urates. After the water blaster, then I go along with the scraper to remove excess water so the concrete dries quicker.

[11] This idea for this use of technology was given to them from the ostrich expert that came from South Africa (see chapter four)

One week old

They just run back and fourth in the runs, and it only takes one for them to take off. The weather was good, still, and warm. The farmers where the birds are going next came down today and had a look at their chicks and they seemed really pleased, then they came in for a cuppa. Later in the day when the sun started to set, we put the birds inside and blasted the run; it was a lot easier than yesterday. As the farmer says if you do it everyday, then there is less and it does not take such a long time. She also is just so pleased with the water blaster as it just gets rid of everything. One year she said that sparrows came and left salmonella behind which the chicks then contracted. If you just blast everything away at the time when you put the chicks away inside then it does not attract any animals, therefore nothing can be spread. It is really the best way to overcome any issues like that. The same goes for diarrhoea, because the birds eat the urates, but you can just separate that particular bird till it comes right, or give it a chalk-like mixture that causes constipation which essentially bungs it up. Then water blast any potential diseases away and then reintroduce it to the group.

The next morning the farmer woke me up to tell me that we have scours. That means some birds have diarrhoea and she likes to separate them so it does not spread to the whole bunch. When I got up and over there, I had to look for birds that had diarrhoea. It was difficult as we have two pens. I was switching between the two and then when I got inside they had moved. It was hard. I had to transfer all the smaller chicks in with the bigger chicks so I had a free pen for the scouring chicks. The chicks I separated then started trilling, the bad cry. I decided to ring the farmer at work and she said that it was because we had played with them all weekend and they missed our attention. So I left them. After the farmer got home, she put the bigger chicks out into the run and blasted out their pen. I looked at them running around and

identified another five or so that needed to be separated. We also cleaned out their food and water troughs. She predicted that we might lose a few over this time. The farmer is surprised that we have not lost any yet because you usually do.

The farmer rang the hatchery down South to ask if they knew why our birds were scouring. It turns out that the injection that we gave them has caused the scouring. Day 10 through 13 is a vulnerable time for the chicks. Until that time, they still have egg sack in their stomach. However, at about day 10 they lose that and the food is supposed to take over that function. However, the injection depleted those resources in the stomach and that has caused the scouring. They need to be fed yoghurt to get the bacteria in their stomach going again. The chick rearer on the big farm says you should never vaccinate them, but it was what the client had wanted, and there are still other farmers who continue to vaccinate. This is one example of a continued debate that farmers must decide what to do, when the outcomes of neither sides are not based on scientific knowledge of ostrich growing.

After giving them the yoghurt, the scours cleared up in a couple of days. The farmer had thought we would lose some during the outbreak, however we did not. The bigger chicks are out because their run is in the sun and they thrive on sunshine. They just run up and down and we are not putting the water inside anymore so they become trained to drink water from the outside source. They run and pirouette and they all seem to follow each other as they run back and fourth. The farmer and I went down to the back paddock and ripped some lucerne up for them to eat, as when they leave, they will go onto a lucerne pasture. Therefore, we introduce it slowly so they get used to it. We may get some diarrhoea tomorrow because of the lucerne. We threw it into their runs and had to rip off the leaves, no stalks and they just quickly munched it all up and quickly. Then the farmer went and fed them

some stones; they munched them up quickly too. She said these chicks are 'such gorgers' compared to other sets they have done. They basically went in themselves; it is good they are learning to go into the shed in the evenings.

Figure 12: Author sitting in the sun with the chicks

Week two and beyond

At this time, we were washing the sheds out every other day and the runs every night after we put them away. We weighed the chicks to fix our curiosity of how heavy the bigger ones were; she thought some would be up around 5 kg. She found some scales, hung a towel into a sling type arrangement and put the birds lying down in it. It is deceiving but the biggest birds are not the heaviest. She does not know where they hold all their weight. The biggest one we weighed was 3 kg. And one of the small ones was almost 1 kg. It is too expensive to run chicks and the farmer has decided not to do ostriches next year as it is not worth it.

The chicks are basically self sufficient, I just need to refill the feed and water containers throughout the day. They are eating a 10 kg bucket full of feed each day. Most days I go out to the

paddock and feed them some lucerne. I also enjoy just sitting with them in the run, they just run around and peck at me. They are so cute; they just follow each other around. Because the weather was good for a long time, the farmer just lets them out in the morning before she goes to work and I go and check them when I get up and periodically through the day. Cleaning up takes a while each night; there is a lot of poo, I cannot stress this enough. Plus I had to learn how to efficiently use the water blaster without getting too much water on the concrete; the runs take about an hour to do. The sheds were fine to clean up, messy, but easier than the runs because the water drains away better; that also takes about an hour.

One day the farmer noticed that two birds have rotation, which is when they have eaten too much for their bodies to handle and their legs have begun to rotate. They may die, and she would be annoyed at this late stage, but there is nothing one can do. They are eating so much and so quickly. The farmer is making up feed every second day currently. This is to keep it fresh and because we are going through so much.

Figure 13: Chicks furiously eating at feed trough

I had to sort out the eggs today as they are going off and starting to smell bad. I sorted them out into their breeder pens. Some pens have quite poor performance, such as pens 52, 45, 49, these had at least nine eggs that did nothing. I set this out so that the agent could see easily why we have so few live chicks. The agent said that the reason why the fertility is terrible is the big farm did not give some vitamins to the breeders and the big farm also put the cocks in a month later than they did the previous year. He imagines it was to save some money. However, we are not the only farm to have issues with poor fertility. This time last year the eggs were satisfactory and that is probably what the different farms were probably betting on.

Figure 14: Leftover eggs that did not hatch

There is a lot of cleaning. Every day we need to clean out the sheds and the runs otherwise they will slip on their poo and it is like ice and their legs may splay and they will never go right again. Chicks are very time-consuming and the amount of cleaning and

watching that is required is not only in the first six weeks but also up until 40 kgs. For this, the farmers get the least financial returns.

On wet days, their set up allows for chicks to go only half way in the run, and still be under shelter. I was told that on hot days it is easier for me to clean out the runs during the day as the concrete dries so quickly and then the poo is not so caked on by the time the evening comes by. I tried this. While time consuming because cleaning then needs to take place twice in one day, it makes the last time a whole lot easier and therefore quicker. The farmer put another feed trough outside. They eat so much and if they are outside then they 'just bolt' in terms of growth. Everyday there is growth. The biggest ones now can peck at my glasses if I am sitting with them.

Figure 15: Chicks halfway in the run

The farmer noticed that one has a prolapse, which is when it poos, but it is all red and inflamed. It is as a result of constipation and it is pushing the poo out. She said this does happen sometimes. It's just one and sometimes it is a whole bunch of

them. We just have to watch it, and it should come right. Also tomorrow, when the farmer's husband makes more feed[12] he is going to put canola oil in with it, which will make their motions softer. The trouble is that she did not want to do this too soon as the motions are soft already and there is no point in fixing a problem that is not already there. This will mean they will not be pushing as hard to get it out. This chick did die.

Moving Day

Well we have been waiting for this day for weeks. It's quite exciting. I stopped feeding them at about midday and then their water about 1.30-2pm. The farmer went and refilled their water at about 4pm because they were starting to flap their wings, which indicates a bit of dehydration. It was a really warm day. The other farmer had made a crate for the back of the truck with six compartments for travelling. I stapled the matting we had used earlier into each compartment, so they did not slip during travelling. We had dinner and about 6.30 we went to load the chicks onto the truck. The farmer picked them up out of the pen from smallest to largest and therefore when I walked around the back and handed them to the farmer he could put them in the crates accordingly. You want to have them quite full but not too full because if one sits down the others may trample on it and kill it. Therefore, that is why we had the small with the small. We delivered 52 chicks in total, from the 53 that hatched.

[12] He usually made up the feed because the individual feed bags were heavy to lift into the concrete mixer.

Figure 16: Chicks in the crate almost ready for moving

Chicks at six weeks of age

When the chicks reach about six weeks of age they are sometimes transferred to another farm until they reach about 40 kilograms. During this time, there is still a chance of death, and they still receive shelter and heating 'because when they're little shelter and shedding is very important'. Chicks need to be kept warm until about three months of age when they will begin to sleep out in the paddock (Thompson and Binks: 2001). This middle stage works for some people because the time commitments are not as high as initial chick rearing and chicks can be put in existing sheds without such a concern for draft elimination. The farmer's role is to 'bring them up to weight to about 30-40 kg and they go down to their farm [the next farm] for finishing'. Over this time, these farmers have good pasture for the ostriches to eat and they learn to live without electric heat. 'So we're in that middle, we're not in the incubation, we're not in the end phase, although we will grow some on ourselves to the end phase for our own meat'. These farmers

have enough land, good pasture and shelter to accommodate growing birds over this time.

> By the time they get up to 30-40 kg which is what we keep them up to, by then they're getting to know too much, they're getting too bossy, too inquisitive and it is time they were moving on.

Ostriches require less and less time spent with them during the day, as they get accustomed to life in a paddock.

Figure 17: Chicks all settled at their new home

Raising Chicks is Hard Work

The hard work is the commitment everyday to go out and care for and play with the chicks. One could just go out, feed them, refill the water, go away and do other things. However, I enjoyed playing with them, I was their mum, they were my babies. For some of those chicks I was the first sight they saw in the world as

they cracked their way into it. Raising chicks is so time consuming. Hours could be spent sitting with them in the sun and just being around them, much like they seem to raise them in South Africa. In South Africa because the labour is cheaper chick rearers even sleep with the chicks. During the hatching, the farmer got up multiple times during the night to check the progress of the chicks. While this was part of my job, there was no expectation that I would be with them at every waking hour. At least once you put them in the shed for the night and then clean the run that is it for the day. The cleaning once they get older is phenomenal. Although I was warned that cleaning would take a while, it was so hard for me to imagine. While it is all part of it, I could see the end of the road so the count down was on for how many times left we had to clean.

The time that goes into raising chicks is amazing. While I attempted to do university work during the days as well, there was the constant disruption of going to check on them, sometimes as often as hourly, or half-hourly. Every week was different, as the attention they needed changed. Balancing the different tasks required in a day, caring for the chicks, other farm work, off-farm work, being a wife, and household tasks are hard work for the women farmers. Chick raising is a lifestyle choice and a dollar value cannot be placed on the number of hours put into this type of farming like you can with regular jobs, it is for the love of it.

It was the most amazing thing to be there when the chicks first cracked out of the egg, and encouraging to see them eat and drink for the first time. Ostrich chicks are the same as any other baby animal being artificially reared, reliant on the farmer to be the mother figure. They are still animals destined for slaughter, although I had named some (Holloway: 2001, 304), there is a separation because they are commercially farmed animals that someone in the world ends up eating. Perhaps also having seen the birds in the works helps in my ability to not to see them as pets. All

of this contributes to farmers who have done chick rearing saying 'raising chicks is hard work'.

Figure 18: Author with chicks

Stock Movement

The transfer of birds from one property to the next usually involves NZOE, as typically they set up when and where the birds are moving to. 'We work with New Zealand Ostrich Exports and they have an agent who goes around finding different buyers to do the finishing side of it'. But now since the industry is so small it can be easier to organise movement without NZOE assistance, as farmers can only get their birds from a limited number of suppliers. Currently there are approximately five farmers doing chicks to 40kg birds and about 25 finishing farmers[13]. Finding finisher farms was a problem of the past, but certainly, for next season in Canterbury there will be a shortage of chick rearers.

[13] Numbers from Export Company August 2006

Transport is an animal welfare issue. The agents organise the transporting of birds. Some birds that go through Clover have come from as far away as Blenheim, which means that they have an overnight at a farm along the way. The ostriches disembark from the truck at someone's block and are left there for approximately a week before they travel on to Gore.

> It's only a day or two, it's not like it's a whole season. But it breaks that journey for those birds, an animal welfare issue you've got to be careful. Transport is a big issue with animal welfare especially long distance. You put animals in a truck for any more than four or five hours they start getting pretty picky from an animal welfare point of view.

The only way to combat this issue of travelling large distances would be for the Canterbury region to grow enough birds to require a plant there. Currently it takes about six hours in the truck from Christchurch to Gore, which is just within acceptable limits.

Finishing

Up until 2006, ostrich finishing farmers have been aiming to achieve 100 kilograms or more at the slaughtering age of 12 months. However, in 2005 the export company changed the criteria to suit market requirements and ostrich farmers are now aiming for 91 kilograms at an average age of nine months. Also in 2005 Clover exports removed the brisket[14] before weighing the

[14] One farmer described the brisket as: 'it's the big piece in the front. In cattle the brisket is the most attractive part, you know the broad part in the front of the cattle beast. Well to me it is, I always look at the broad brisket of a cattle beast and you usually look at the other end and there's a damn good rump on the other end hasn't he? A broad brisket, well with the bird the brisket has absolutely no meat'.

carcass, because the processing floor has been modified, which is now reflected in the amounts farmers are receiving for each bird.

At this stage, farmers generally feed out once a day. 'He comes home at night and the first thing he does is he goes out and feeds the ostriches their barley and pellets; he goes out and does that'. The pellets are expensive and what exact amounts of each product are in the pellet are difficult to determine. In addition, weighing the ostriches on a regular basis is good management and ensures feed amounts are correct and that the birds will be up to weight in time.

> Well we weigh them every fortnight and I want to see a return every two weeks, average of 300 grams a day and if they go down to 250 I'd give them more feed and if they go up 350-400 we'd ease back a bit on the feed.

> Because of the emphasis for the processing part, they must put on three kilos a week or 300 grams a day or whatever it is, so you need to weigh them all the time to make sure that you're doing the right thing to get them putting on the weight quick enough, to get them through as fast as you can.

> The cost of feed is expensive for ostriches. A tonne of barley costs about $240. The pellets are more expensive; they are about $760 a tonne. It is quite expensive but then if you do the right thing you get the weight on them properly.

Some farmers grow their own barley, which they would normally do with or without ostriches, but it makes growing ostriches more economical.

Figure 19: Feeding out to finishing stock

Figure 20: Author helping to feed out

The birds learn through repetition like any animal and by weighing on a regular basis, the birds as well as the farmers learn

what to expect and are easier to handle. 'Well because we do it regularly and the birds are used to us and we're used to them'. This example of good farm management helps ensure that the birds are commercially viable, and part of this process, like farming any livestock, requires timely decision making (NZOA: 2003). Some farmers do not have enough land to make finishing ostriches profitable, and others have found specialising in other areas easier for themselves. Finishing birds is the most profitable part of ostrich farming and can be done by any farmer, not only those with specific ostrich handling experience. Time commitments are similar to any stock. 'Like people who finish beef or deer do the same, they buy in young stock and they finish it. So anybody could do that'.

Financial Viability

Over the course of ostrich history in New Zealand, there have been many farmers involved, and many have left, so many that the New Zealand Ostrich Association membership is almost as small as when it began. People have left the industry for a variety of reasons, some because they were losing money. For others, ostriches did not work well on their property and/or with their lifestyle, and some found out ostriches are difficult to run. Others were deterred by Clover closing. Those who have stayed in through the initial turmoil and growth have eventually made money in ostriches and made it viable to stay in. The people who are currently still in remain because they love what they are doing and have created systems on their properties, which have made farming ostriches viable.

> We'll be staying in. We'll be staying in there if it's something to stay in there for and if not economically then I think we still

will have some birds of our own because we've really enjoyed being involved with them so far.

These systems have taken years to establish and improve to where ostrich farmers are today. 'But we're still in it you know that's the silly part about it. So it's like anything; you don't invest more than what you can afford to lose'.

As the industry has progressed, many have left which is not good for a new industry. However, current schedule prices do not promote promise and growth for the industry especially amongst part time farmers. There is a great deal of work involved in producing ostriches and that is not being recognised by the current schedule prices. The general feelings in terms of ostrich production are:

We want to know that we're not doing it for nothing

Yeah, you don't wanna do all your work for nothing, and get not much return

Well he's told me that he won't be in it next year for nothing, he said if I've done it for nothing this year then I won't have them next year. Well you wouldn't; no

Hopefully it will be worthwhile, because we enjoy them, I'd hate to see it happen.

The process of how ostriches are farmed in New Zealand has changed over time due to people leaving the industry and those left having to adapt. Also the marketing requirements of finished birds has changed, due to the high New Zealand dollar and the ideal weight of 91 kilograms which would bring the highest return, which

means farmers have had to rethink their systems to get the birds up to weight in time[15]. Additionally, all of these processes differ between farms as every farmer has different management styles. 'It's up to each individual what you want to do'.

In the beginning of exporting ostrich, the prices were low compared to what farmers were receiving domestically. It took about a year for prices to improve and they have generally been on the increase ever since. This is one comment made by the export company:

> So when you're pioneering and you're so small it's hard to give everybody enough money to make them extremely profitable because we haven't got the numbers to go through. Until we get to that level, which we're heading to pretty quickly now, it's going to be hard. It's profitable now but it's not as good as what I'd like to see it.

A copy of the current schedule is attached to a newsletter to ostrich farmers that the export company produces (see appendix five). The schedule is a calculated price of what it costs the export company plus a small bit of profit.

> When we work out our schedule which is the price that we pay the grower when he gets his money for putting his carcass over the scales, like you've seen at the Clover is where they weigh their carcass and say it's 40 kgs and we pay them $8 or $9 a kg, right. We come to that figure by working out all our returns from the meat and leather and then taking off all our costs, and one of the costs is the processing fee. It's one of the biggest costs. So we take off all those things and of course our company cost, an overhead and then that's

[15] Payment is determined by the weight of the carcass

> how you derive your schedule price. So the more numbers we can put through the easier it is to spread the cost of everything so it makes it better for everybody.

The exchange rate also affects the prices on the schedule. 'If there's a high exchange rate, the less you get for each stock'. Farmers have an understanding of our dollar versus the currency in the country where the product is exported.

> Because we sell all our meat, ostrich whatever, I mean a lot of the ostrich is going into Canada, so we're looking at the US dollar. It's all based in relation to how much our dollar is worth against their dollar, or against the British pound.
>
> The schedule price per kilo won't change, they have told us, say $9.60 for a 34 kg bird, so they're not going to change that. But the exchange rate changes all the time, which means that they're going to be getting less for it overseas, if the value of the dollar increases. And it's the same for your meat, wool and lamb, your butter, milk everything; it's all dependent on how much our dollar is worth, because it's all exports.

In 2005 the schedule was down from the previous year. Part of this is because of New Zealand's high dollar, however, market requirements have changed. Compared to 2004, farmers are being paid less for their birds in two ways. Firstly, the export company is taking lighter birds, partly as a response to the market requirements, and also Clover now removes the brisket before carcass weighing (NZOE: July 2005). Secondly, the price offered per kilogram was down in 2005 because of the high dollar.

> Well I sort of think they need to get out there and do their homework, get overseas and get the markets and then have a fair stab at what the bottom line should be, because I think this year, it looks like they're doing it a bit different. Last year we got $350 per bird. This year the top price at $9.60 can't be any more than $330 a bird, on my figures.

The minimum which the export company will pay the farmer for a bird in 2005 was $320, to help compensate farmers in this difficult time (NZOE: October 2005). So finishing farmers are going to be paid less for these two reasons.

The most recent schedule effective January 2007 is down again as the exchange rates are high and the South African market has dumped product at very low prices on the EU market. NZOE is now offering only $300 minimum per bird (see appendix five).

Fascination and Newness

Ostriches are very new to New Zealand and farmers were asked if farming ostriches seemed new to them. Ostrich farming has existed in South Africa for hundreds of years, but because they knew nothing about ostrich farming when they started.

> Very new, we knew nothing about it and nobody else in New Zealand did either.

> It's part of the excitement of any of those sorts of things. It's a new sort of thing something you can get involved in and learn about.

Others commented that they knew ostriches were around in New Zealand having read articles in newspapers about their emergence

into the farming scene. Overall farmers believed that ostrich farming was a new venture.

All ostrich farmers commented on the ostriches as being fascinating and elegant birds.

> well because, we have been out there often and walked amongst them and feed them and particularly on the weekends and we get quite a lot of pleasure out of watching them and trying to communicate with them and watch what they do, feeding them. I think they're fascinating creatures.

> I do find them fascinating but not to the point where I look at their eyelashes and look at the cosmetic side of it. They're fascinating because they're birds and they're big and they grow so quick and they have some unique characteristics.

> As I said it was something, we were always fascinated by them and when we did get them, we really liked them, they were interesting. They are there's something different about them. I mean we've been on a farm where we've farmed sheep and cattle and deer and had all sorts of farm animals but there's something about ostriches that are different.

Ostriches are a bit different to usual farmed livestock. Some farmers find them charming while others comment on their elegance.

> You look at an ostrich and especially at a male in the breeding season and they're big, they weigh 110-120 kg when they're breeding, they are well grown, they have big wings and big feathers and they shake their wings. And also when they are

in that season they have red legs, red beak and they do look quite elegant.

And then it's just elegant then the old girl walks along and drops down on her knees and hello he pops her one.

The way these farmers are so interested in these birds not only for their profit producing potential, helps the industry stay alive. Some farmers really enjoy the birds, which makes their survival on their property a challenge they want to achieve.

Challenges of Ostriches

Many issues face ostrich farmers because they are farming new types of livestock and they embarked on a huge learning curve when they decided to run ostriches commercially. There are common problems that face ostrich farmers. Most come about because these farmers have not run birds before and they require different handling and management techniques. These sorts of problems occur on the farm and there will always be mistakes made with new livestock; this will be addressed further in chapter four. Other challenges that affect the industry as a whole are bird flu, DDT and feed. Every farmer has an anecdote of something that has not gone right with ostriches, but they have learned from it and tried not to make similar errors again. The major issue that was identified by farmers was feed. Farmers are unaware what exactly the make up of the feed is, and they want to know if they can do it better and cheaper. Every year something new is brought to the forefront of the ostrich farmer's attention.

Common Problems

Being an ostrich farmer that sells essentially all products to overseas markets means global issues affect the individual farmer. With the outbreak of bird flu, farmers and exporters alike are curious to know what the effect will be if it comes to New Zealand.

> Obviously, the concern is what could be the effect on the ostrich industry if bird flu came to New Zealand. I don't know what the answer to that is. Are ostriches affected by bird flu? I don't know. That's a negative, or could be a negative.

Efforts have been made by some farmers to minimise their losses if an outbreak does occur. However, at this stage no one can say what the consequences will be.

In late 2005 the ostrich schedule went down by 50c a kilogram across all grades. This means less profit per bird because of the exchange rates both in the EU and in the US.

> The other challenges have been obviously like in any farming, getting the stability into the end price because again if you're going to have a schedule price you want to try and have that as stable as much as you possibly can. Again, that's going to encourage people to do things and at one stage, I think it was about two or three years ago they had a problem down south and of course, the schedule dropped down to about $3.50 and of course everybody lost interest pretty quickly.

The export company also places a warning to farmers on keeping the hides of ostriches undamaged, because the hides and meat price are incorporated into the one schedule price. The South

Africans who tan them decide the quality of hides exported. A good hide is worth $150. Farmers at all stages of the growing process can affect hide quality. The exporters do place particular emphasis on those who do chick rearing as damage can occur while the hide is growing if the chicks are piling on top of each other to get to the heat source. When the hide is scratched they get downgraded which means less money. Farmers at all stages can help prevent this by careful loading and avoiding pile-up (NZOE: October 2005).

Wireworm used to be a problem for ostrich farmers. Now farmers know they can just test their property for it (further discussion in chapter two). Another issue for farmers that is testable is DDT. DDT was an insecticide commonly used on soil throughout New Zealand; its residues last in the soil for years. Ostriches peck into the soil and therefore have a higher intake than cattle. 'It wasn't until they found this product in birds that they realised that it could be a potential problem. But again you know you can have your place tested for it'.

Another problem is that ostriches tend to graze only at one end of the paddock. Farmers can help eliminate this by not having paddocks that end at a hedge.

> We had a good paddock but they'd only eat at one end. This is a common problem with them right, and they only eat at one part and although you have all this nice grass at the other end of the paddock they won't go down there and eat it [the hedge end]. Right, so what we ended up doing was dividing our paddock so that it forced them, we put them physically in that area. So we controlled it that way and that way we got better utilisation of the pasture, rather than a whole lot not being eaten and nothing where we needed it.

Some of these problems have come to the forefront of farmers' businesses over time. However, the biggest problem as highlighted by current farmers is the feed.

Feed

What is in the feed? This is an ongoing problem for farmers. No one seems to know the correct mix of what to feed ostriches for commercial purposes.

> That is an issue with ostrich, because as far as we have been able to find out so far in the industry, nobody's found a food that will maintain an ostrich or grow an ostrich without buying a prepared food. You don't have to go and buy a prepared food for a cow; a cow will sit out in your paddock and eat grass and produce milk. And a sheep will go out in the paddock and eat grass and grow. And an ostrich will but it won't grow at the rate that you want it to grow, so you have to feed it prepared food.

The main problem for farmers is working out exactly what is in the feed.

> Working out the feed, we established that feeding them was extremely important, they need a lot of minerals and vitamins and you have to make sure that they're not lacking in anything and it's quite hard to determine that. Working out what is in the feed that you buy.
>
> There is one issue for us personally; I think that the Association should do something about and that is to get some sort of continuity in the feed. Well the biggest expense

> for us ostrich farmers are the pellets and we haven't got a clue whether they are 50% rat shit and 50% barley. They could be. We don't know, because we can't see what they put in it and they're [company] not going to tell us. If the Association got their heads together and got all of us together like a cooperative and said will you supply us with so many tonnes of pellets a year, at such and such a price and we want this, this and this in it. We want to know what's in those pellets and that's where we're at the moment. We've got no idea what's in those pellets.

Increasingly the likelihood of what should be going into the feed is getting better as scientists investigate it. Ostriches eat barley, lucerne, grower pellets and grass. 'And when you go and feed them at night, I always put pellets in first in the trough and they always go mad over the pellets; they just push'. 'You'd never stop them on pellets; they just eat and eat and eat'.

At the moment, most farmers just buy the bags made up by the stock feed companies. The pellets are expensive and that is where the profit goes if a farmer is mostly relying on the pellet supplement to bring the birds to weight. A good pasture is also necessary. Farmers asserted that lucerne chaff would be the best for putting weight on the birds, but it is expensive.

> The only other thing, which I might look into a bit more, is lucerne hay and chaffing it, chopping it. That seems to be good for them and if we can find out more from some people. I've got a couple of people in mind that I'm going to contact that I've heard did do it, people that did it a long time ago. And see I don't know what the cost of that would be, I mean I don't know what you'd pay for a mill to chop a bit up. You've got to take the cost of buying a thing to chop it up. And then

> the time involved in doing it but it looks like they do well on chaffed lucerne. And it would also be a good thing to have when you're short of grass in the winter.
>
> And after last year's experience we were sure that we could do it. We could fatten them on this little area and very little grass. So that's a big challenge this year, plus we wanted to feed them less, but get the same results, because the pellets are dear and we wanted to keep them back. They're like feeding money into a moneybox. The moment they put it down their throat it costs you dollars. So that's the challenge. The challenge is not to over feed them, but feed them enough to get the same results.

The stock feed companies currently decide on the mix, and do provide a list of what goes into it, but they neglect to state what percentage of each element is present in the bag.

> I can go to [company] today and say what do you put in your food and he'd give me a list. Now how do I know without taking a handful of the food that he produces and taking it to an analyst and now tell me what's in that food. Is it the same as what's on this list? That's why I don't think that they do it. Because I think that they change the food from time to time. I can't say that I know that, but I think they might do. Like if lucerne is $100 a bale they might decide not to put so much lucerne in it.

Farmers buy from the stock feed company by the tonne or half tonne.

> The mash and that, we buy it in bags, 25 kg bags from [company] and we usually buy half a tonne at a time at the start of the season and then when the numbers are higher a tonne lot at a time. Then obviously, at the end of the season it reduces back down to sort of half a tonne load at a time and the barley which we supplementary feed with.

There are so few farmers who buy ostrich feed now that the companies now make it in terms of supply and demand.

> They must do a run of them. I mean I rung the other day and got a tonne and I said, have you got them there and they came back and yeah they did have...Whereas I've rung them at another time and they've said they won't be ready till Friday. I might ring on Monday and they say it won't be ready till Friday. And that tells me that they haven't got them and they were making more. So I think they're supply and demand.

Some farmers have taken this issue into their own hands and created a recipe that they believe is correct for the stock food company to make up for them. 'We told them what we wanted in it. We gave them a recipe and they made it for us. We buy it in by the tonne. We go and tell them we want a tonne of ostrich grower. They've got my recipe; they just open up the book'. Alternatively, some will buy all the ingredients and mix it up at home themselves. Some farmers have even done small trials on their property to see what results different feed regimes will bring.

> We may do an experiment ourselves purely just to try it, where say if we did have access to getting some chaffed up we might put 10 birds in a separate paddock for the year and

> feed them different. It's the only way that you're going to find out. Feed them different feed for the whole season and see how well they do. Because it's the only way you'll actually learn different ways of doing it.

The big farm at Five Rivers must have investigated feed from a scientific view, but they have not been open about any findings. 'Well it's something that I've always thought of, I'm sure between us all especially with the farm. I'm sure the farm have done a lot more work and research into food'. Farmers feel they have to take this feed issue into their own hands if they want to find out what works and what does not.

> But there's still a question mark and maybe that's something that we've got to study next time we get a government grant. But I think we should all know, and I think we probably do know what should be in it and you could go to [company] and say this is what I want. Whether you get it is probably another matter and unless you're prepared to go and take the handful into an analyst and say, is that what I've asked for, like you don't know. You're trusting your stock food manufacturer.
>
> At the end of the day, my belief is that we should have enough information now after 10 years to know what the best feed for ostrich is.

Feed is a big issue, because if farmers can obtain the right mix perhaps they can grow ostriches more efficiently and economically. The implications of sorting out the feed issue are that the farmers will have learned how to achieve a positive outcome for an issue that needed to be in their control, for traceability reasons. This will

shape the way they address external issues in the future as they will have learned from this experience. There are also other challenges which farmers face.

Individual Challenges

Many farmers identified challenges on their own properties that they will attempt to overcome this season. They mostly relate to the farmer's ability to farm ostriches better and more efficiently. They have learned from previous mistakes and have thought of solutions which would make ostriches easier and more viable for them. This form of learning through self-monitoring is usually automatic as farmers use informal monitoring to assess the conditions of their farm and stock, which is considered good farming (Wilkinson: 1996). The challenge for some is not necessarily cutting costs, but making it more economical so they can make a better profit. One farmer has made a real effort to get his pasture quality up so he may not have to invest in so many pellets. Another farmer saw his individual challenge as getting the ostriches up to the recommended weight.

> Probably to reach the targets. When we went to the field days, they sort of indicated that you know 300 grams a day is the sort of thing that they could put on, 200-300 grams wasn't it? Well we found quite quickly that we could put 300 grams a day on them and I think probably we weigh them every two weeks to see that we're doing that. Well that's a challenge and then a couple of weighs ago it had been cold, we hadn't upped their feed and they only averaged like 240 or something like that. So it's a challenge then to think hey we need to increase their feed, weigh them in two weeks time and see that we get them back up to that.

Farmers continue growing ostriches each year with slightly adjusted ideas from the previous year of how best they can farm ostriches. They perceive that they can grow them better and more efficiently, as well as more economically. Each farmer has his/her own individual challenges, some of which relate to how they balance their work and farming life.

The Realities of Living on a Lifestyle Block

What is the rural lifestyle and why do urbanites seek it? Discussing the rural lifestyle implies a quality of life superior to living in the city (Smith: 2004). Robertson (2000) and Fairweather (1993) established from small holders that they moved rurally to escape the city and live the rural lifestyle, which includes open space, no neighbours, quietness, tranquillity, clean and fresh air, animals, freedom, less pressure, is good for children, and is relaxing. Smith (2004) explores the notion of the rural idyll which is associated with the motivations of moving to rural areas. The rural idyll is a cultural construct that is an individually defined concept of what one thinks the rural experience consists of and how they see themselves fitting into it. Cook and Fairweather found that the rural or country lifestyle was the most important motivation for smallholders when purchasing land (2005 b, 15). Mead asserts that aesthetic and recreational considerations are the major attractions of rural living for part time farmers (1974, 46). This section uses New Zealand literature on lifestyle block living and the reasons why it is an appealing lifestyle and considers how ostrich farmers make the rural idyll work in their everyday lives.

It is difficult for a lifestyle block even if it intensively run to provide sufficient income alone for the farmer to live off. Therefore

lifestyle block owners hold full time employment off the farm and come home to a rural setting. One farmer described this as the 'vista', where farmers run stock or crops that are pretty and not necessarily for their earning potential. This is further demonstrated by Cook and Fairweather who discovered that smallholder's commitment to lawn and garden care averaged six hours per week and they spent an average of $1415.64 per annum to maintain their gardens and lawns (2005 b, 37). Many lifestyle blocks have extensive houses and even bigger lawns, yet the design of the property does not permit stock trucks to enter and have room to turn around. These types of properties are for lifestylers who have little or no interest in making crop or stock use of their surrounding acres.

The term lifestyle is a subjective cultural construct that relates to individuals' perceptions of how other groups of people are living and how they can possibly fit in with that image (Sobel, 1981; Smith, 2004). It is the perception of belonging to a particular status group that can act as motivator for others to want to demonstrate this lifestyle (Sobel: 1981, 8). Lifestyle is used as the descriptive means to differentiate between status groups and class (Sobel: 1981, 9). When urban people move to the country they are seeking the rural idyll because of their culturally based expectations (Smith: 2004, 57). Urbanites think of the country as the simple life, a happy place with a sense of the community, where ingenuity and resourcefulness are well practised. Despite all the effort and hard work where there is always something to be done, farmers can still make a loss (Smith: 2004, 62). 'Arcadian ideals such as these commonly emerge in overseas studies of motivations for migration to rural areas' (Smith: 2004, 62). One motivation that is part of this ideal is the desire to be part of a rural community. Becoming a local requires time and being involved in community activities. According to Smith, there now exists a new hybrid rurality in areas

where there are many newcomers. It is a result of new and old farmers weaving together to form a community (2004, 63). Smith also asserts the importance of rural images that bring about a nostalgic feel for the past of simpler living and an idyllic ideal that enables 'an escape from modernity' (2004, 63). Fairweather links these expectations to common rural symbols and images in New Zealand culture (1993). Footrot Flats, Country Calendar and advertisements such as 'Scotty and Crumpy' for Toyota, all portray the rural lifestyle in an idyllic setting. Fairweather states:

> New Zealand culture is imbued with rural symbols and images. Many people value things that are rural and this status, value and popularity of rural images sustains interest in actually experiencing the rural life first hand. It is likely that smallholders will articulate strong rural values (1993, 5).

According to Smith, full time farmers describe their quality of life holistically or definitively, whereas smallholders indirectly illustrate their attitude to country living (2004). Smith found when he asked participants the question 'what comes to mind when you think of the term rural?' full time farmers gave answers directly related to farming, whereas smallholders convey answers indicating escapism from the city life they previously lived (2004, 58). Part time farmers see the lifestyle of living rurally as providing 'the best of both worlds' (Barlett: 1986, 290). Schroeder, Fliegel, and Van Es identified two dimensions of the small scale farm lifestyle, they are status enhancement and work role gratification (1985, 306). The study looks at the degree to which small scale farmers perceive their farming activity as a form of status enhancement and the value of intrinsic rewards involved in the farm work role (Schroeder et al: 1985, 310). She uses Weber's ideas of social status as an early theory about lifestyle. Weber thought part of the definition of lifestyle included the consumption of goods (Schroeder et al: 1985,

307); therefore, many lifestyle farmers have large houses. Schroeder et al suggests the meaning of lifestyle is determined by cultural capital, and it depends on economic factors, education, experience and collectively held values (1985, 307). Small-scale farmers have dual occupations and the study found that farmers felt their occupations provided complementary gratification (Schroeder et al: 1985, 310). Conclusively the more important, better paying off-farm employment reduced the need for deriving status and gratification from farming (Schroeder et al: 1985, 317). Lifestyle block farmers engage in off-farm employment to help maintain their lifestyle.

Off-farm employment is best defined by Taylor and Little 'off farm employment of the farmer or his/her spouse refers in the text to employment off the farm in return for some sort of remuneration, including, in some cases, exchange of labour for goods and services' (1995, 6). The literature (Taylor and Little, 1995; Kinsella, Wilson, De Jong and Renting 2000; Campbell, 1994) suggests that working off the farm is a diversification strategy. However, for the majority of interviewed farmers their diversity of interests in general is choosing the move rurally and, running something on their land in an attempt to make profit compared with having a large lawn. Multiple job holding is recognised by McClintock and Taylor as a choice rather than a necessity (2004, 7). Part time farmers have full time employment, which they had since completing their education and have added a farm to their lifestyle (Barlett: 1986, 297). This matched exactly the stories of the ostrich farmers interviewed. In other countries studies have been done on pluriactivity, primarily from the US and Europe. Because part time farming is a relatively new phenomenon especially in the last 20 years, researchers have been increasingly interested in this field as it is part of the norm. Pluriactivity in relation to lifestyle block farmers is their ability to farm part time and also work usually full

time off the farm. Engaging in pluriactivity is one strategy part time farmers use to make their lifestyle operate successfully.

The motivation of farmers to utilize pluriactivity in their economic and social lives is variable. City dwellers that choose the rural home life and maintain their city experience through employment are continually seeking the balance that encapsulates their take on the rural idyll. Kinsella et al use an Ireland example of pluriactivity, as Ireland's proportion of pluriactive farming households is high compared with EU standards. Their aim is to understand pluriactivity as a livelihood strategy and the long term impact and its role in rural development (Kinsella et al: 2000, 481). Full time farming in their study area is the exception. Pluriactivity affects the standard of living and quality of life of individual farm households (Kinsella et al: 2000, 483). Many of the motivations their respondents recalled for continuing or taking up farming were socio-cultural reasons, although some were motivated for income related reasons to cover daily expenses (Kinsella et al: 2000, 487). Socio-cultural factors are the pull reasons that attract farmers into pluriactivity, compared with push reasons which mainly stem from economic factors (Kinsella et al: 2000, 486). Examples of socio-cultural factors are jobs that: contrast to farming activities, build up a savings account, enable healthier daily meal choices, build a foundation for retirement and maintain the rural residence (Kinsella et al: 2000, 487). Pluriactivity in Kinsella et al's study is the accepted way to farm in the area and their respondents agreed that farming and/or country living may be unattractive without it (2000, 489). In summary, pluriactivity in farm households minimizes economic vulnerability, the risk of external factors such as the markets and the dollar, and encourages diversity.

The following are examples of how ostrich farmers have adapted pluriactivity to their daily lives. Most of the farmers interviewed were part time farmers, which means they received

income from off the farm. These farmers can be classed as hobby or lifestyle farmers 'where family income is substantially obtained off farms and farm activities have very limited output' (Taylor and Little: 1995). Most have full time employment in nearby towns like Christchurch and Ashburton, as it is more economical to work off the property to achieve the lifestyle they want. While farmers will be trying to make money out of their farming efforts, they are not reliant on that income.

> because at the end day it's secondary, which it is for a lot of other people and it's a lifestyle choice, having land. You've got to decide what you're going to do with it. You could leave it and just mow it every so often, if you wanted to. But I mean in general you're going to be looking around for something that you can do with that land. So you go into it with obviously the possibility that you're going to have a profitable business at the end of it

> obviously we're looking to make improvements each year so it becomes easier to handle the numbers and provide better margin than it might have in the past. So there's always small improvements that you're looking to make and that, one for lifestyle reasons and the other is to achieve a better margin from the birds.

This means that their farming abilities and aspirations compared to bigger farms do differ. While they do want their ostrich venture to succeed, they seemingly have greater options if ostriches do not work out, in terms of employment, and whether they want to continue living in the country, although this does vary. To the extent that their knowledge and prior experience is limited and field days and conferences provide times of learning about pastures and

animal husbandry, for example to further their management options.

> as a lifestyle block farmer you know you're not depending on what you're doing there for your living. So therefore, you probably don't go into it in as much detail as a real farmer would.

Part of making their system work better is how it fits in with their lifestyle. Most of the farmers interviewed had full time employment away from the farm. This is an important factor when deciding whether to run ostriches or not and also how to manage them, due to time restraints during the week.

> So we were away from 8-5 each day, so you had to do everything at night and weekends. It was just getting a bit too much.

Working full time then requires the farmer to continue working once they get home from a day at work 'either the evening or weekends we seemed to muddle our way through'. This is the common way of how they make hobby farming work for them. Whereas others found ostriches fitted in with greater ease to their current lifestyle 'well it's just another animal'.

Making ostriches fit in with their lifestyle also requires a time element as 'They do take a lot more work than sheep and cattle'. Before getting ostriches on the property farmers can ask others what the expected time commitments are to tend to these birds, but until they begin working with them, it is only a rough estimate. When asked if ostriches take up more or less time than they originally thought farmers were on both ends of the scale.

It takes more

It's unreal, much less than, I think anyone who doesn't know anything about it, would I think, would think we spent a lot more time looking after them than we do

Finishers right, would be on par with, or a bit less with sheep and cattle. And as you climb down the scale to chick rearing that's quite high and incubation and that first 6 weeks is really full on. Right so as they get older they need less time.

For many this is their first time as farmers, as over half the interviewees are originally 'townies'. Their decision to live on a lifestyle block is a choice and having only small amounts of land and time, limits their ability to run a lot of livestock. Ostriches can easily be run on small blocks of land at any stage of production.

what I'm saying, ostrich farming doesn't take up a huge amount of land for a small block holder, right. So it could be seen to be by small block holders something that you can do with your land and hopefully make a bit of money on it.

Making ostriches fit with their lifestyle has required adaptation on the part of the farmer.

It's coming we've adapted to it, it was a bit strange for a start but we've got used to it, what it is and what we've got to do. We just work around it and make our lifestyle suit it.

Each part of the ostrich process needs different time requirements, which also differs between farmers, as a result of their management styles.

A part time farm is that which is not or cannot be run to generate sufficient income from farming activities alone. The definition of size of a part time farm varies from researcher to researcher. Hayes defines lifestyle blocks as properties between 0.5 and 10 hectares (2002, 4); Robertson and Fairweather's study included land sizes between 0.2 to 20 hectares (2000, 1) and Cook and Fairweather's definition of a smallholding was between one and 40 hectares (2005 b, 5). The average size of a smallholding in New Zealand is 8.50 hectares (Cook and Fairweather: 2005 a, 13). The average size of the ostrich farms from the interviews was 21.6 acres.

Many studies have investigated how small block holders see themselves. Cook and Fairweather found 44.4% called themselves lifestylers, 36.6% hobby/small farmer and only 19% thought of themselves as farmer/horticulturalist (2005 a, 12). Whereas Robertson and Fairweather discovered in their study that 46% preferred the term lifestyler and only 15% called themselves small farmers (2000, 21). Therefore, overall people that live on lifestyle blocks generally see themselves as lifestylers; this differs from the ostrich farmers who could be considered and see themselves as small farmers. The ostrich farmers interviewed are part time farmers rather than lifestylers as they run stock for commercial purposes. However, it is a lifestyle choice to be living in a rural area.

There are multiple other characteristics of small block holders that have been researched in New Zealand. Most of the farmers interviewed were predominately older couples in their 50s[16], the average age was 51.1. This result is similar to Cook and Fairweather's average age for lifestyle block holders of 52.8 (2005 a, 12) and 50.2 (2005 b, 25). Overall most people that live on

[16] Only two farmers were single men, both lived with their immediate family on the property.

lifestyle blocks have some previous farm experience. Cook and Fairweather found that 71.3% of their respondents had previous experience (2005 a, 14). In the Selwyn district 66% of small holding owners had previous farm experience (Cook and Fairweather: 2005 b, 35). I discovered ostrich farmers mostly had previous farming experience; a majority of those came from rural backgrounds, while others had helped out on farms during their lives. Cook and Fairweather's average for years lived on the farm were 10.07 (2005 b, 9) and 12.44 (2005 a, 13), compared with the ostrich farmers who had been on their lifestyle blocks for an average of 11.8 years. In Robertson and Fairweather's study, most lifestyle block farmers worked predominately in administration, professional or trade occupations.

My participants had occupations such as teacher, sub contractor and manager. Two of the eight couples interviewed were retired. Goals and aspirations for ostrich farmers included travelling and various ostrich production goals that correspond to the land size and whether the price remains economically viable.

Lifestyle farming could be viewed as not as economically risky as full time farming because these farmers are diversified in that not all their economic activities come from one source. They are also not as vulnerable to global economic conditions because they are pluriactive. Ostriches fit well on lifestyle blocks and with some sorts of farmers because they are interesting, unique animals.

Conclusion

The way ostriches are farmed in the South Island has changed over time partly in response to marketing to overseas customers and partly because farmers have become specialised in one area of ostrich farming. 'Getting into' the industry differs between farmers; each had different resources, capital and farming goals. The

farmers interviewed have mostly been involved in the industry for many years. They have stayed in the ostrich industry by specialising and creating individual systems of management that make ostriches a viable farming alternative. The current ostrich growing practices outlined are consistent with the different types of ostrich farms that are typical of the way ostriches are presently produced in the South Island. These farmers have organised their lives and management systems around the segmented way ostriches are currently being produced. My experience living and working on a chick rearing farm for six weeks aided my research goals immensely, to learn for myself what needed to be done on the farm. Although I had amazing guidance from the farmers when I was by myself during the days, observing was the key. Feed was the prevailing issue as identified by farmers; they desire more control over this process, but until they better determine the essential ingredients, nothing will change. The feed issue is an example of a 'work in progress' for these farmers and has demonstrated how those in a new industry learn through the problems that they face. What the motivations of urbanites and what sort of people are enthusiastic enough to move to a rural area with little practical farming experience was investigated through New Zealand literature on small holders. The rural idyll plays a significant part in the appeal of the rural lifestyle especially for smallholders. Part time farmers manage by utilising pluriactivity as their diversification strategy for survival. The idea of the rural idyll is being lived out by these farmers and their interpretation of it. As such the way these farmers learn works in accordance with their own goals that correspond to the rural idyll. The way in which ostriches are currently farmed has changed and developed over time. Farmers have learned which has had implication on their rural idyll ideal. This chapter has identified many elements of learning processes farmers have experienced, which will be

explored extensively in the next chapter, and how they have adapted to the changing scene of ostrich farming.

CHAPTER FOUR

HOW FARMERS LEARN HOW TO FARM

Introduction

Farmer learning is an important topic of research because the way farmers do their practice impacts upon primary industry outputs which are vital to New Zealand's economy. Farming is a rapidly changing environment which means it is important for farmers to learn more effectively and efficiently to ensure timely decision making for their properties. It is important to identify the ways in which farmers learn and which learning environments have the most impact on farming practices. Farmers have different ways of accessing and processing information; they are constantly faced with information on new technologies and one skill farmers need is to be able to sift through the relevant information (Kilpatrick: 2003). Farmers prefer to learn through their social networks and to see new technologies operating successfully on other farms before they adopt them (Fonseca: 2001). Wenger (1998) refers to this form of social participation as 'communities of practice', that characterise the process of learning and knowing. Ostrich farmers in this study are members of their own community of practice which is centred around their membership of the Association.
Additionally, New Zealand has no culture of attention to traditional formal farming qualifications such as degrees and short courses at universities or polytechnics (Allan: 2005) although there are some farmers who have taken advantage of tertiary education.

New Zealand ostrich farmers have created their own paths to learning successful ostrich management techniques because there are no institutions specifically set up for them. Farmers have established participatory approaches to learning that they follow as individuals usually through informal learning channels such as field days. In the early days there was a huge deficit in the amount and quality of information about ostriches and thus much of what was learnt was achieved by trial and error. Since these are part time farmers they may access other learning cultures, which occurs in many pioneering industries (Kilpatrick: 2003, 157). For newcomers the NZOA manual is the best-written New Zealand-specific source available to them, which was made possible because of the Sustainable Farming Fund grant. Compared to other established industries ostrich farmers have limited ways of accessing information. Learning how to farm ostriches through informal learning is a combination of livestock experience, written knowledge on the internet or in books, asking others in the industry, asking those who are no longer in the industry, participating in industry events such as field days, learning by doing, trial and error, improving individual management and common sense. This chapter investigates each of these elements in turn, and explains how these ostrich farmers have learned and specialised their skill sets in an attempt to make ostrich farming a profitable venture.

Farmer Learning Literature

Agricultural research used to be carried out in relative isolation from the farming community, using a top-down approach, as information discovered was communicated in scientific jargon and the view was held that innovation and knowledge existed primarily in research institutions. Traditionally, Rogers (1995) was

the predominately-quoted source about farmer learning, decision making, adoption of innovations and technology transfer. Technology transfer is 'the specific process by which farmers or growers become aware of, gain access to, interpret, and then apply new knowledge, ideas or technologies' (Butcher: 1998, 12). Rogers' work has been dominant in rural literature for several decades and there have been many editions of *Diffusion of Innovations* (1962, 1971, 1983, 1995, 2003). The transfer of technology (TOT) and diffusion models that originated in the United States have been used extensively in agriculture; since the 1970s this top-down approach has been predominately used for agricultural research in New Zealand (Reid: 1996, 7). Although there are now more recent theories to be used in rural research, Rogers is still used as foundational literature.

According to Rogers' model, farmers pass through five stages in the innovation decision process: knowledge, persuasion, decision, implementation and confirmation (Rogers: 1995, 20). This process covers the length of time required by a farmer from first knowledge to confirmation of the decision to reject or adopt the innovation. These steps do not always occur in succession and some steps may merge. Farmers are assumed to be economically rational and that the innovation will be economically beneficial (Vanclay: 1995) which is not always the case. Rogers' adoption model viewed farmers as adopters or non-adopters and categorised them into innovators, early adopters, early majority, late majority and laggards (Rogers: 1995, 22). However, the major criticism with this model is that it expects farmers will adopt each innovation; if they do not they are viewed as unsuccessful because they are not participating. Using the categories in this model is limiting because it does not expand to include the reasons why farmers are choosing to adopt or not adopt a particular technology (Howden and Vanclay: 2000, 296). While these reasons vary from farmer to farmer, they are

imperative to know for any technology transfer to successfully occur. This model is useful as a way of viewing the different stages these ostrich farmers identified in their story of how they 'got into' the industry.

Rogers states that diffusion is a social process that occurs through interpersonal networks (1995, 82) which again stresses the importance of farmers talking. 'The heart of the diffusion process consists of interpersonal network exchanges and social modelling between those individuals who have already adopted an innovation and those who are then influenced to do so' (Rogers: 1995, 34). The idea of interpersonal networks is key for many authors in reference to adult learning (Wenger, 1998; Allan, 2002). Authors are in universal agreement of the importance of this notion.

Another approach is farming systems research (FSR) that emerged out of programmes designed to raise the standard of living in rural communities in third world countries. Prior to FSR the developed world adhered to Rogers' diffusion model because the model was expected to provide the channel to transfer the ideas from institutions like local government, which would promote growth and rural development. FSR complements the traditional diffusion method of exploring agricultural research. The underlying idea of FSR is that the technology is adapted to balance the farming system (Reid: 1996, 16). In broad terms, FSR is defined as an approach that:

> a) views the farm as a system, and central to the farming system is the farmer and farm family.
> b) is concerned primarily with understanding and solving the problems of the farming system, and by definition sees the farm family as a major beneficiary of the research.
> c) is by nature dynamic and iterative.
> d) inherently requires the active participation of farmers in the research process.
> e) adopts on-farm research as a component of the research process.

f) requires by definition, researcher and practitioners to work in multi-disciplinary teams. (Reid: 1996, 17).

FSR is a systems approach to solving farmer issues that recognises the interactions of the farming system, the family and the networks in operation of the farming system. There are two forms of FSR, FSR-X and FSR-P. The difference between the two forms is that FSR-X is extractive and FSR-P is participatory in terms of the extent of involvement of the farmer (Reid: 1996, 18). FSR-P demonstrates a link to Chambers' work by using a participatory approach. FSR assumes that farmers possess a great depth of knowledge and understanding of their farming systems and incorporates the practice of assessing technologies under actual on-farm conditions (Reid: 1996, 16). FSR is a helpful approach to view farmer issues because it requires the researcher to have an understanding of the family and the networks involved in the farming system. The following diagram (figure 21) condenses the history of predominately used rural research theories, as discussed above.

Figure 21: Agricultural research and extension: summary of dominant perspectives and methods for action in developing countries from the 1950 to 1990s (Source: Reid: 1996, 20).

Time period	Predominant model for R & D	Reasons for Non adoption	Prescription	Methods
1950s 1960s	TOT	Farmer ignorance	Farmer education/ Extension	Questionnaire surveys
1970s 1980s	FSR-X	Farm level constraints	Input support removal of constraints	Questionnaire surveys, Modelling, On-farm research, RPA
1990s	FSR-P	Inappropriate technology	Farmer participation	Discussion, PRA observation, diagramming by and with farmers, etc.

The next significant literature entitled *Farmer First,* originated from Chambers, Pacey and Thrupp (1989) who recognised that farmers have always been innovators and cannot be labelled as plainly as adopters or non-adopters. Farmers select elements from new technologies and adapt those to their circumstances (Chambers: 1989, 5). The major difference in this theory is the participatory approach that asserts innovations originate from the farmer, rather than just the scientist. Farmers exhibit local knowledge and adapt to the continually changing farming environment to the extent that Chambers asserts 'farmers are professional specialists in survival' (1989, 3). This further confirms the idea that farmers are innovators, because they have been able

to adapt and innovate in difficult and changing times. Farm priorities and participation are the central idea of 'farmer first' (Chambers: 1989). This theory is useful to this inquiry because it validates the importance of the farmers' viewpoint.

Scoones (1994) attempts to move beyond farmer first and suggests that simply observing farmers and asking them to identify their learning channels is not enough to gain a full understanding of their preferred learning methods. 'What people do is not necessarily what people consciously know' (Scoones: 1994, 26) which works in accordance with Wenger's thoughts that situations where learning is the focus are not necessarily those in which people learn most or most deeply (1998, 8). Farmer knowledge occurs in action, therefore what farmers say they do can be different from what actually happens (Scoones: 1994, 26). Scoones brings further attention to the fact that farmers are innovators, and researchers need to understand how innovation occurs and that asking farmers about their practices may not be enough to ascertain the full picture of their experience.

Farmer Learning in New Zealand

Farmer learning primarily occurs through informal learning channels. Informal learning is the most popular method which means farmer learning has occurred in informal realms, such as field days, trial and error, and chatting over the fence with the neighbour. Kilpatrick identified that farmers have 'a reliance on social and business networks for information and learning' (2003, 154). Allan found that New Zealand research done by agricultural science and educational organisations on farmer learning has shifted from the transfer of technology model to a learner centred learning paradigm. This shift is described 'as a move from passive

learning to interactive, participatory learning' (Allan: 2002, 3). In New Zealand MAF used to influence the way in which farmers learned through measures such as extension agents. However between 1987 to 1990 (MAF: 1994, 64) it became the individual farmer's responsibility to facilitate their own learning, perhaps by joining discussion groups. This shift led to a rapid increase in informal learning channels for some farmers because learning opportunities such as the utilisation of extension agents are now on a user pays basis, compared to earlier years where farmer learning activities were state funded (MAF: 1994). Farmers now 'educate themselves in a wide variety of informal ways which are difficult to measure' (Bamberry, Dunn and Lamont: 1997, 3), but important to recognise and improve. Bamberry et al asserts an operational definition of farmer education needs to include both formal and informal components (1997, 9).

Informal monitoring is one way farmers have learned about their stock and improved their management systems. Informal monitoring is used by farmers to assess the conditions of their farm and their stock; they go around their farm making visual assessments (Wilkinson: 1996, 6). Wilkinson found this is what a 'good farmer' does, and is part of the skill of being a 'good farmer' (1996, 6). Farmers are increasingly being required to adhere to formal monitoring patterns prescribed by government agencies and farmer organisations (Wilkinson: 1996, 6). The pressure from these agencies is a result of farmers becoming more accountable for their farm management actions and policies to the community, environmentalists, consumers and all levels of government (Wilkinson: 1996, 6). Monitoring is one informal way farmers learn, which was and has always been done for the reasons of being a good farmer, and now researchers are paying more attention to it.

One informal learning source is the way farmers respond to challenges and negotiate responses. The most applicable idea in

Paine's thesis (1997) is that actors within the industry 'muddle through' to expand their knowledge of their practice. Muddling through in the ostrich industry has been the main strategy used by actors to get to the current point of how they produce ostriches.

> Muddling through is a sequence of readjusting actions that build towards a recognisable pattern of activity, or method of accommodating uncertainty with more success than would be possible if the rules of adjustment were absent. Strategic activities by actors in the theatre of innovation attempt to eliminate errors in practice (Paine: 1997, 161).

Because the ostrich industry structure is flexible, young and lacking in experienced players, muddling through has been a suitable method of negotiating challenges.

Another ongoing informal learning source for farmers is from the information that arrives in their mailbox. One issue (Allan, 2005; Kilpatrick 2003) is that farmers receive a large amount of information; their challenge is to filter through and decide what is relevant. Some farmers are more adept at this process than others, and these farmers are more likely to be high performers, who view their farm as a business and thrive on continuing to improve their farming practice (Fonseca: 2001, 25). Allan compares them with lower performers who have interests (such as family and community) elsewhere and view farming as a lifestyle first and a business second.

Field days such as Mystery Creek and the A and P show are commonplace in New Zealand because of the continued commitment and family networks that are an important part of New Zealand rural life (Helensville A and P Association: 2002, 87). Both types of shows offer farmers learning opportunities to see what other forms of farming are doing, and what innovations they are working with. The annual A and P shows (run throughout the country) are large annual events where farmers compete for prizes

and watch other attractions such as horse events. A and P shows aim to promote continuance of farming techniques and community (Helensville A and P Association: 2002, 87). Mystery Creek field days are a three day event near Hamilton that offer farmers the opportunity to 'talk farming, agriculture, and life on the land with an endless stream of visitors in swandris and woolly hats, tweed jackets and gumboots' (Thompson: 1993, 9). Mystery Creek's history is much shorter, compared with A and P shows, beginning in the late 1960s. Mystery Creek field days aim to offer a festival to increase public awareness of the agricultural sphere, weld city and country together and provide exhibitions to attract a variety of visitors (Thompson: 1993, 13). The most important part of both shows for farmers are the demonstrations because they provide the learning opportunities.

Informal learning is one way that is employed by farmers; however, formal training in farming is also a learning channel although not as prevalent. New Zealand has no culture of attending courses for traditional formal qualifications, (Allan: 2005) although farmers do have formal education outlets such as agriculture courses offered at high school, polytechnics, and agricultural degrees offered at Lincoln and Massey Universities. These institutions run diploma and short courses which focus on agricultural industries, as well as degrees. According to Bamberry et al the main advantages of previous formal education is that farmers learn how to learn (1997, 7). Kilpatrick asserts that farmers prefer to learn by seeking information rather than training (1998). In his study he discovered farmers became uncomfortable and viewed the word 'learning' as a negative connotation, whereas 'seeking information' was seen by farmers as something they would do, rather than training (Kilpatrick: 1998). Only two out of the total of 16 ostrich farmers interviewed (partners included) had formal farming qualifications. Kilpatrick states there is a link between

education and training and farm profitability (2003, 152). Knowing how farmers learn has serious implications because if trainers can develop programmes which farmers respond well to, then primary industry outcomes will most likely be much brighter. Learning is an ongoing process that develops within farmers over time through both formal and informal ways.

Farmer learning literature in New Zealand is limited, in fact the area of farmer learning is a recent development in researcher interest, especially since the 1984 reforms and the removal of farming subsidies, particularly focusing on the Australian experience (Bamberry et al, 1997; Kilpatrick, 2003). The most relevant New Zealand specific farmer learning literature for my purposes has been contributed by Allan (2002) who has a specific interest in the question of how individual farmers learn in the New Zealand context. Allan uses Wenger as a framework for her research to illustrate the ways in which her farmers construct knowledge. Wenger is appropriate for that project because some of the farmers studied are masters of their practice and immerse themselves in the continual learning culture of their practice. Allan's use of Wenger stimulated me to view the ostrich farmers in Wenger's context of participatory learning.

Allan's thesis investigates how six sheep, beef and dairy farmers gain new ideas, make changes to their farming practice, and reach the level of mastery, as well as the steps and interaction involved in this process. Learning and development is the integration of the 'know what' and the 'know how' which is significant to farmer knowledge (Allan: 2002, 17). As farmers fill their knowledge gaps they make the transition from novice towards expert and eventually to mastery. Four out of six of her farmers were high performing. Some farmers desire to be high performers and characteristically learn from their mistakes and view them as challenges, they take risks (Allan: 2002, 92) and demonstrate a

desire to run their farm better. The higher performing farmers learn by asking questions, reading, experimenting and observing (Allan: 2002, 93). Farmers learn how to farm better using a mixture of propositional knowledge including reading, field days and discussion groups and procedural knowledge such as just doing it, practice, trial and error and experimenting (Allan: 2002, 93). High performing farmers demonstrated a fluidity of knowledge construction and thrived on reading and critically analysing (Allan: 2002, 93). They demonstrated the ability to learn from propositional knowledge and apply it on the farm, then through reflection, interaction and experience, they were able to construct new propositional knowledge (Allan: 2002, 93). Allan asserts a need for farmers to experience a temporary disengagement from farming for dispositional knowledge such as the ability to use knowledge to develop from practices for example: other work places, tertiary education or travel (2002, 127). Ostrich farmers have a dispositional knowledge, because most have been working in the city, they are older and therefore have more life experience perhaps by travelling or education.

Farmers that had off-farm experiences had acquired knowledgeable identities; they had developed the necessary dispositions needed to construct and use knowledge (Allan: 2002, 134) – they had learned how to learn. Conclusively, Allan found resource rich constellations of communities of practice surrounding the various farmers who are continually advancing their practice and social interaction (2002, 135).

Sources of Knowledge

Farmers use a variety of sources to obtain information about new technologies. The main sources of learning for farmers as

identified in the literature are: veterinarians, farming publications, other farmers, discussion groups, field days, monitor farms, consultants, observation and experience, training activities, experts, and media (print and electronic) (Kilpatrick, 2003; Fonseca, 2001; Butcher, 1998; Bamberry et al, 1997). Farmers that use multiple of the listed sources are generally better performers (Allan, 2002; Kilpatrick, 2003). Fonseca's study found that farmers that ally themselves with professionals such as veterinarians, stock agents, and farm advisors gain a wealth of information because those professionals visit many farms and know about problems and their solutions (2001, 25). Bamberry et al observed that farmers learn by doing, and they gain both written and spoken information (1997,3). They also found areas newly exploited by farmers to be: computer databases, the internet and, increasingly, specialist advisers (Bamberry et al: 1997, 3). Butcher discovered veterinarians were the most frequently used source of information (1998, 12). Butcher's study noted that deer farmers did not identify any information source which may be due to the youth of the industry (1998, 13). This finding may be similar to ostrich farmers because they also have experiences that relate to the newness of the industry in terms of lacking reliable information sources which established industries would generally have. Despite all these available sources the larger population of farmers prefer to learn from each other.

Farmers learn best from other farmers, in the form of talking and seeing what others are doing. Many farmers learn from informal sources and learning on the job (Bamberry et al: 1997, 9). Moore asserts that although farmers wanted to read about new technologies, hearing and seeing how the technology performed locally by a commercial farmer was more important (1990, 41). Seeing a technology being used successfully on another farm is important and useful for farmers in the adoption of new

technologies (Fonseca: 2001, 21). This is why successful ostrich farmers hold field days and monitor farms are being increasingly used as a learning tool. Through observation in group learning environments farmers prefer a good 'content, approach and delivery' (Bamberry et al: 1997, 4), all of which need to be practical, short, flexible with farming schedules and include a social element. An example of this could be a farmer directed group (Bamberry et al: 1997, 4). Fonseca discovered other farmers to be a widely used source such as ringing, visiting, talking in the pub, at dog trials, or at farm shows (2001, 29). Farmers 'tend to prefer learning through interaction, delivered in a way that suits the time constraints of running a small business with content that is directly relevant to their situation' (Kilpatrick: 2003, 162). Discussions with other farmers are the first source where farmers develop their ideas (Vanclay: 1998, 86). Farmers' preference for learning from other farmers is key for the adoption of new technologies and learning.

The learning channels open to farmers vary according to industry, location and non farming interests. Sheep, cattle, dairy and deer are established industries in New Zealand that offer farmers many ways to enhance their farming skills and build on their knowledge. Ostrich farmers have comparatively fewer channels open to them for learning, primarily because the information does not exist. How farmers learn is a valid inquiry because there are a variety of ways that farmers have had to develop in order to facilitate successful learning environments for their particular farming venture. It is necessary to acknowledge all of these theories about farmers as adopters or non-adopters and as originators of innovations because they have been so dominant in rural sociological research. The main idea from the background literature is that farmers have specific learning channels available to them which have developed over time and are variable dependent upon industry resources. The ostrich industry has limited resources

compared to traditional farming industries therefore ostrich farmers utilise participation in learning environments, which is key for their ability to adapt and evolve as a new, small, niche industry.

The Theoretical Model

For this particular research inquiry on farmer learning Wenger is useful because his discussion of learning through social participation places the ostrich farmer network in a particular context which brings further meaning to their learning interactions and processes. Wenger's (1998) theory on learning as social participation has been widely used as a way of discussing the process of farming learning and knowing (Butcher, 1998; Allan, 2002; Kilpatrick, 2003) it is the most useful framework for viewing ostrich farmers because their ways of acquiring knowledge relevant to their farming practice, are limited and immersed in the social world. 'Learning involves social participation – in particular, by being an active participant in the practices of social communities, and by constructing an identity in relation to each community' (Mayes: 2002, 225).

Social participation is key to ostrich farmers' learning experience because of the informal learning nature that has developed in their particular farming practice. According to Wenger, learning is an integral part of our everyday lives that is shaped by an individual's competence and experience of meaning (1998, 138). Wenger uses the example of a claims processing worker of a large company as a practical illustration of his social theory of learning. An example is given by going through many steps and procedures in a day in the life of a claims processor; the reader imagines parts of her day such as her office layout, other people she interacts with, her duties and responsibilities and the culture of this particular claim-processing office of which she has

membership because it is her work community. Most parts of her day are detailed: from her processing several claims, attending a meeting, relationships she has with co-workers and breaks. All these are normal and routine activities for a worker in a large company, and/or office work environment, therefore it is a familiar experience (Wenger: 1998, 6). This is an example of a structured learning environment. Much of the claims processor's learning takes place on the job where she can ask co-workers with greater experience for assistance. Although the company provides training sessions, much of her experience of learning occurs through to the interaction she has with others in the office. In contrast to Wenger's example of a claims processor's learning experience ostrich farmers have an unstructured way of learning. Ideas and information are passed verbally as there is very little written down that could be used as a learning base. Furthermore farmers are on individual farms, widely geographically dispersed and advisors are not as readily available as they would be in an office environment.

This social theory of learning is characterised by four interconnected concepts: practice (learning as doing), identity (learning as becoming), community (learning as belonging), and meaning (learning as experience) (Wenger: 1998, 5). Each of these components is interconnected and has an equal bearing on what makes up the process of learning. Wenger's term 'community of practice' is the integration of these four components. His theory can be applied to any learning situation due to the nature of the components. Different learning situations will incur learning experiences that relate to each of the components. I will now describe each of these learning components (practice, identity, community and meaning) in relation to the ostrich farmers' experience.

Wenger asserts that every practice has an aspect of knowledge and doing, and that practice is a form of knowing (1998,

141). Ostrich farmers who have been in the industry for a while have knowledge of their practice that they can share with others, while they themselves are constantly learning through continued practice. This sort of knowing is defined in the context of the lifestyle block, ostrich-farming experience, which has specific practices that have arisen out of an amalgamation of 'a regime of competence and an experience of meaning' (Wenger: 1998, 141). Ostrich farmers experience meaning through their practice. Their meaning could be their ability to be good farmers, good business people or good at juggling jobs. Practice is a process where our engagement and experience of the world is meaningful (Wenger: 1998, 51). The important point here is not only that we engage in the social world but to discover what parts give meaning to our interaction (Wenger: 1998, 51).

Wenger's concept of identity brings focus to the individual and the formation of identity process. These ostrich farmers' multimembership of life includes being lifestyle block farmers, parents, holding full time employment off the farm, some being retired and having an assortment of hobbies. When they come together at field days, for example, these identities do not disappear; in fact due to the social environment conversations may cover aspects of an individual's multimembership.

Communities of practice are shared histories of learning, which are a combination of participation and reification that are intertwined over time (Wenger: 1998, 86). Ostrich farmers' community of practice centres around the farming of ostriches for commercial purposes[17]. Communities of practice exist in any place where individuals engage in a social practice. Therefore, being an active participant in social practices aids the creation of an

[17] I concentrate on one community of practice, centred around membership to the Association. Two other communities or practices exist, one is farmers that do not join the Association and the other is the big farm at Five Rivers. All have different learning experiences because of the particularities that exist within their community of practice.

individual's identity in accordance with the community. For example, as I observed at the field day and the annual conference, for some ostrich farmers this community of practice is based around membership of the Association, but due to the shared nature of this learning practice farmers are connected in diverse and complex ways (Wenger: 1998, 77). Ostrich farmers are connected because of the system where birds are passed from one farm to the next at a certain age/stage. Therefore farmers are interdependent on one another.

Finally, Wenger argues that meaning is found in a process called negotiation of meaning that arises out of the interactions of two processes – participation and reification. Reification is the 'sources of remembering and forgetting'; reification takes the form of physical objects (Wenger: 1998, 88). These objects form a connection to the shared history, by remembering an 'experience of participation' through an artefact, engagement in practice is reinforced (Wenger: 1998, 89), and 'the communicative ability of artefacts depends on how the work of negotiating meaning is distributed between reification and participation' (Wenger: 1998, 64). They are not in opposition to one another, they interact and 'cannot be defined independently of each other' (Wenger: 1998, 70). 'Different mixes become differentially productive of meaning' (Wenger: 1998, 64). For ostrich farmers the physical objects such as conference notes, the schedule, the manual and the website, are the only typed documents and have less importance mostly due to the lack of their availability for learning situations.

Reification is the physical consolidation of the participatory learning process. Wenger uses the term reification to mean 'the process of giving form to our experience by producing objects that congeal this experience into "thingness"' (1998, 58). Wenger's examples of thingness are derived:

> from entries in a journal to historical records, from names to classification systems, from the Constitution to a signature on a credit card slip, from gourmet recipes to medical procedures, from tortuous political speeches to the yellow pages (Wenger: 1998, 59).

Ostrich farmers' systems of reification need to be updated as they have gone into decline. The only up to date item is the schedule (for more information see chapter three), which is updated and presented through power relations present between farmers, NZOE, the market, and the slaughtering plant. Reification is limited in the ostrich industry, therefore social participation has become important for industry structure. This differs from many structured learning environments in which the written material stimulates the social interaction. In contrast, the ostrich farming industry exists and survives without any written information to stimulate social interaction. Ostrich farmers' participation (their ability to recall practices and experiences, even though they do not consider them as learning experiences) and reification (a conference pack of notes and copies of a power point presentation or free gift they received from a conference) does occur through a process of negotiation of meaning.

If one side of the reification and participation duality formed is relied on more heavily, meaning is more likely to be problematic in practice (Wenger: 1998, 65).

> If participation prevails – if most of what matters is left unreified – then there may not be enough material to anchor the specificities of coordination and to uncover diverging assumptions. This is why lawyers always want everything in writing (Wenger: 1998, 65).

The ostrich farming industry is unevenly balanced toward the side of participation, however the industry still has coordination which is mostly decided by NZOE. Farmers learn the coordination of the industry and uncover assumptions by talking to other farmers and interacting with NZOE. Essentially they fit themselves into the industry based on their understanding of conversations. However if farmers added more reification to their practice it may not restore the imbalance, which shows a form of reification on its own will not correct industry deficiencies (Wenger: 1998, 65).

The practices of the ostrich-farming community have developed over time and become the property of the community through mutual engagement, joint enterprise and shared repertoire, as seen in Figure 22 (Wenger: 1998, 73).

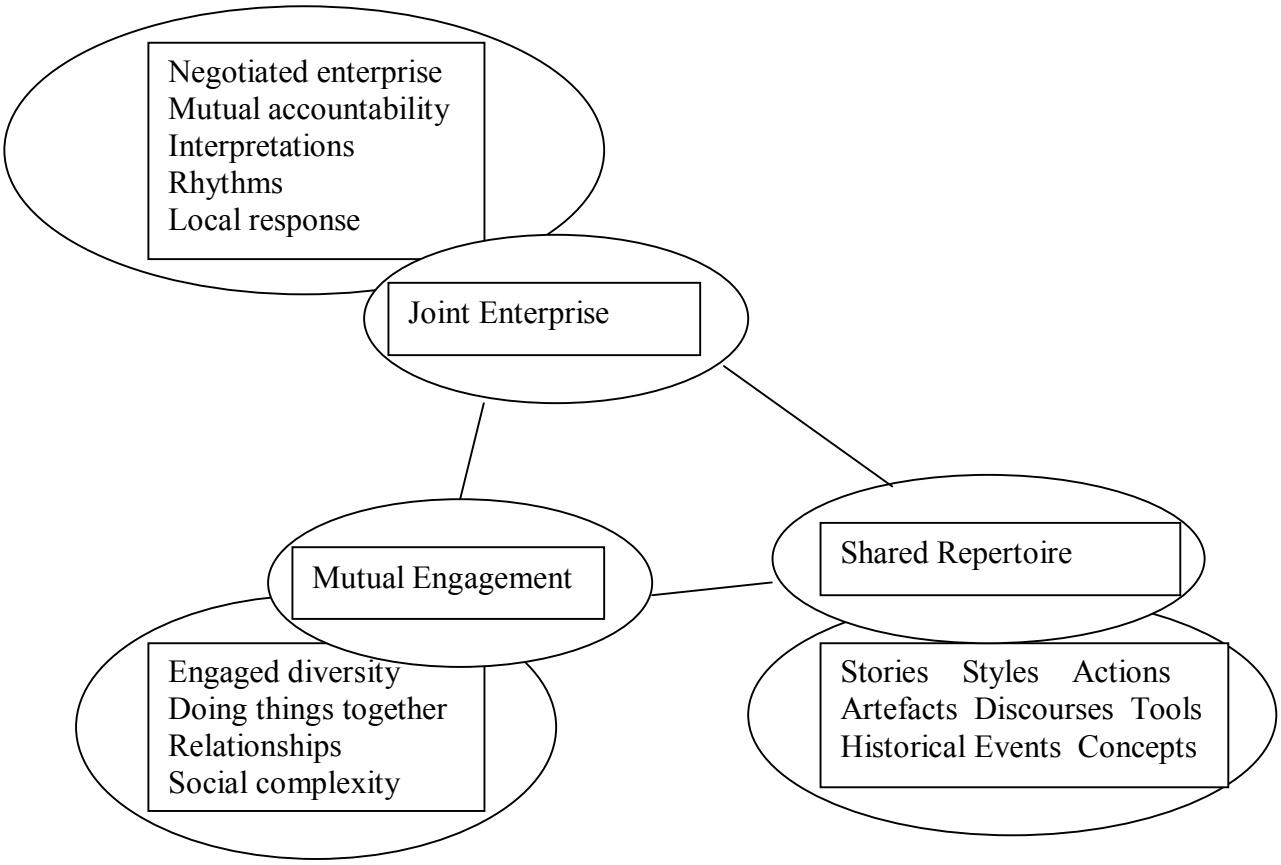

Figure 22: Dimensions of practice as the property of a community (Source: Wenger: 1998, 73).

Ostrich farmers experience mutual engagement by using the telephone and via email; this characterises membership of the community of practice. Shared repertoire can occur when talking with experienced ostrich farmers and listening to events that have happened, or changes to their practice, or the acquisition of tools (physical or learned) that have helped develop their practice. Joint enterprise keeps the community of practice together through collective negotiation. Collective negotiation is defined and created by participants that becomes mutual accountability, which is an essential part of the practice (Wenger: 1998, 98). Participation is central to ostrich farmer learning; especially the collective sphere where practice, meaning, identity and community contribute to the learning process.

> Each act of participation or reification, from the public to the most private, reflects the mutual constitution between individuals and collectivities. Our practices, our languages, our artefacts, and our world views all reflect our social relations. Even the most private thoughts make use of concepts, images, and perspectives that we understand through our participation in social communities (Wenger: 1998, 146).

Wenger's theory is useful for understanding ostrich farmers because they participate in their own community of practice, which generates farmer learning on an informal basis.

Learning How to Farm Ostriches

Traditionally farming techniques can be learned from the family if an individual is from a rural background, similar to the apprenticeship model. Through this window information channels

are already open because of the rural culture that exists in New Zealand. Full time farmers know how to access information through each other, veterinarians, field days, and organisations such as Federated Farmers. Industry organisations and associations offer members access to field days, specific information and events that pertain to their farming venture. However, many of the farmers interviewed were part-time farmers from an urban background and this is their first time farming. Their information channels are slightly varied, as one farmer commented, and others implied, they do not need the detail of technical knowledge that a full time farmer does, because they are not wholly reliant on farming as a means for survival. Also they may not know their neighbours or be as well known around the district. This means that information at their field days and conferences cater to that audience, which aims to improve their technical farming knowledge. For example at the 2005 conference, one speaker spoke about pasture management, which these farmers may not otherwise be exposed to.

Farmers frequently suggest that other farmers are an important source of information about farming (Vanclay: 1995, 105). Ostrich farmers have found the best way to learn about ostriches is to ask questions.

> Asking question, definitely asking questions
>
> You ask lots of questions, you talk to people
>
> You know and you ask different people different ways of doing it what you should do.
>
> Just by asking questions and going and looking at their establishments and asking questions.

Those already in the industry are a valuable resource for new-comers. Older players have vast experience with the birds and by talking to those already in the industry about problems that they

have experienced they have less chance of being repeated by new-comers. As there is very little written about ostriches, especially in the practical everyday sense, for example how much to feed them, how to move them, how to handle them, asking people is the main tool used to discover this information. Moore states farmers rely heavily on other farmers for advice (1990, 5).

> But I mean it is pretty much you talk to people and you find out what they're feeding them, how much they're roughly feeding and so you do get a general idea of how much you should feed them.

Exited players can also contribute to some farmers' knowledge, if newcomers have those sorts of contacts; for example, some ex-ostrich farmers simply enter into other farming ventures, but still reside at the same address. If someone in the industry knew this, they could pass their phone number onto the new farmer, which has occurred. Exited players contribute to lost knowledge, if they become inaccessible later on, their experience and knowledge is a lost commodity for the industry.

People living in the country tend to know their neighbours, due to the need to minimise isolation, otherwise they would have to drive further for social contact. Despite the tension that exists this allows most people in the district to know you, or your family, if you are a long term resident (Smith, 2004; Robertson, 2000). The term community in this sense refers to the geographical areas in which farmers live, rather than the symbolic or social communities (Robertson: 2000, 135)[18]. This country life means farmers can share things like machinery, labour, advice, social bonds and time, with their neighbours. These lifestyle block farmers who do not have life long ties to the country form these connections through the Association. These people would not know each other if they

[18] Robertson (2000) explains communities as 'Symbolic communities can be spread over a wide space but see people uniting over a common interest… Alternatively, communities defined by location alone can be as diverse as the people who reside within them. However the term 'community' usually masks that diversity by assuming unity' (135).

had not been members. The Association today does not have many members, everyone knows everybody else and therefore farmers talk to everyone at the ostrich meets. These ties extend to when farmers are in town.

> Normally you always see them at like when you see them at field days in Christchurch or you might see …around or … when you're in town, he always stops and talks to ya, and you ask him how it's going and you talk to other ostrich farmers and they tell ya what's been happening. You do see people around and talk to them all the time and they always ask about ya and stuff. It was a close community within reason, so.

Keeping in contact with other farmers is important so they can discuss issues and continue learning. The farmers that are still in the ostrich industry are very friendly and willingly share information.

> Like we've found them absolutely marvellous, they have all been very open with us, which is great. One of them made the comment that it wasn't like this a few years ago, everyone sort of pocketed their own information and wouldn't hand it on, wouldn't help people. We think the people we have met within the industry, which is very small, are lovely people and very willing to share their knowledge with us, which is marvellous and it's great to have that. A lot of these people didn't have that when they started.
>
> Earlier on it was quite often, people would ring and say you know this is happening and you just sort of throw it around. It's a waste of time ringing a vet, it's just throwing money away, because they don't know, we've got more idea of what's happening than the vets with the birds. So you end up with a group of people and that there, that you just fire it round. You might ring two or three people and get their view on it and sit down and say well, you've listened to three people of what they've had to say and it's really down to you as to which way you want to go, or you ignore the whole lot and go your own way.
>
> If there was problem of any of us, we would all, I'm sure because we all get on well, would freely ring other people and

> say hey we've got a sick bird or whatever, or they're not doing too good, how are yours doing. So that in a way, an unofficial network is probably there, within just a small group.
>
> He and his wife have been great and we had a visit to them and they were very good, but everybody has been helpful. I can't say there has been, everybody has been helpful that we've talked to.

Others who have been in the industry longer do not feel the need to ring other ostrich farmers for advice; they have become less reliant on others for learning tips, and have developed friendships that surpass ostriches.

For farmers that choose not to join the Association ringing a member for help is not seen as such an open channel as it would be if they had joined.

> It has been known for them to do that, yes. Sometimes they get help, sometimes they don't, sometimes they get help with a membership form sent to them at the same time.

Non-Association members can always contact the export company for advice if they need it. However, joining the Association opens up many channels to farmers, channels that include having access to other farmers that may have experienced that same issue.

When asking farmers where they learned how to farm ostriches, they talked about field days, the Association, and specific individuals who have been instrumental in their learning process.

> Basically got talking to them after the field day
>
> Just a matter of talking to other people
>
> You learn a lot off other people, and you do
>
> Without a doubt, talking to people who are in your industry practically is by far, in my view, by far the best way. I think that's the most value that the association or the export company with field days can give the ostrich industry because

> that's where people learn. That's where people exchange ideas, that's how you know what's going on in your industry.

One farmer's path of learning through networks began from the onset of buying his birds and has continued to build from there.

> Oh because again I learnt that from straight away from the person that I bought the birds from what do you feed them, how much do you feed them, where do you get the food from, all those sorts of things. I mean you learn from people and then later on as we developed and joined the Association and went to field days then you get other people chipping in as to what they do and maybe some people give some additives and other people don't and so on and so forth. Then you start building your knowledge.

One farmer said they learnt how to raise ostriches, on their own:

> it was hit and miss, we didn't really know what the hell we were doing, we learnt as we went along.

Some previous owners have been very helpful to newcomers in how to rear ostriches, how to manage and feed them, their characteristics and what they are like to work with.

> Oh he just told us roughly to feed them this and that and then you're on your own. You learn in a big hurry, like any livestock, you learn.

Another farmer found it useful to work with the ostriches on the owner's property. Just by walking among them and weighing them he was able to adapt to ostrich behaviours better than if he had waited until they were on his own property. From there the newcomer then upskills other family members on new techniques learned.

> Well I mean she's learnt as she's gone from me. So she knows how much to feed them, she helps weigh them and in general she's learnt from what I've done.

Talking to others is the key of learning how to farm ostriches in the South Island. Other useful ways for farmers to learn is through seeing and doing. Farmers have the opportunity to visit other ostrich farms through the Association and the export company, who organise field days held at ostrich farms. Seeing what others are doing and how they are doing it is useful for farmers because usually they only have their own set up to base decisions on. Viewing other farms may initiate changes and developments in their own systems as a way of raising ostriches better.

> We've got so much to learn and they're the opportunities you've got to grab to get all the ideas together as much as you can to help you when you need to make your decisions.

One farmer described this as 'looking at what other people are doing' which the farmer saw as the way they learned everything. By seeing what others are doing they can learn by watching and then applying that to their own farms.

> Learn from those people and go on their farm and see their birds and see what they did, their yards and everything else.

Most farmers have widened their knowledge on how to raise ostriches and how to improve their systems by attending days like this. Clearly talking to other farmers and participating in the social opportunities in the industry has aided the learning process. Ostrich farmers have engaged in the participatory aspects of the limited learning culture available to them. Participation 'suggests both action and connection' (Wenger: 1998, 55), which are the two processes primarily discussed above.

Initial Learning Upon Arrival

Once the birds are on the property the 'real fun starts'. Each farmer found his way through dealing with and managing a new species. Much of this learning took place once the birds had arrived

and the farmer fitted them into his/her current practices. Many of the farmers' comments relate to learning as they went. This works in accordance with Kilpatrick's findings that learning on the job is an important process that featured as one of the main sources identified by farmers (2003, 154). Also Wenger's idea that the claim processor learns more on the job because 'what they learn is their practice' is consistent with the ostrich farmers experience (1998, 95). While ostrich farmers had systems in place and had planned how they would run ostriches before they arrived some of those aspects became flexible as the farmer adapted to ostriches.

> You had to learn how to understand to handle the birds, we didn't know how to handle them. For us to learn that, we spent a lot of time out with them, we walked among them. We stood and we watched them, we brought them into the yard and weighed them a lot, we handled them a lot, so we got used to them, they got used to us.
>
> You've gotta sort of like bribe the buggers if anything. But once they get into your way of life, or you also meet up with them half way.

With farmers' own experience with livestock, help from Association members and common sense, these ostrich farmers have learned how to handle and manage ostriches successfully. One area farmers commented on is they have found they are watching the weather a lot more compared to other stock's needs.

> Yeah, you're looking out and seeing oh there's rumour that we're going to get a southerly change so you know and you're sort of waiting and watching the cloud formations, yip southerly's on its way go and put them inside, beat it.

Other new skills vary from how to handle and manage them to the bird's behaviour.

> And you've got to look for any nasty ones in case they attack ya.

> I was sort of pretty much like converting our own farming methods of sheep and cattle, which I thought would work which did work, but in winter it came to the crunch and you've got to convert it to chooks, which sounds weird but.
>
> And they popped their knees, or their knee joint there. We had a couple go like that and it was just because they were growing too fast for the rest of their body to catch up and their ligaments and that there weren't strong enough. Happens also in ducks, ducks also happens to that they grow too fast, so yeah. You learn from that there. And other than that we were told you put them in the paddock and they grow, it's not quite like that but that's what we were led to believe.

One farmer said he was watching the programme *Crocodile Hunter* one night on television and he saw Steve using a broom to help move emus and he applied that to moving ostriches in the yards. These pieces of technical knowledge have mostly been gained through experience with dealing with the birds on their property, usually as a result of losses of birds.

Farmers are trying to control ostrich growth rates and make ostriches more viable. Individual management styles vary, but there are always improvements that can be made to the current system, improvements like investing in better fences, yards, and runs.

> Some farms are really well set out and others aren't quite so well. We've changed all ours twice and we think we've got it right for us. We don't have all our farm set out for ostrich, only a portion of it. So that all the eggs aren't in one basket.
>
> I've done some figures on it since we've come back from Blenheim only, purely going to see those people on the Sunday morning really had me thinking hey we can do better here than we've been doing.
>
> The following season you've gotta say am I going to do this again, is it worth it, or are you going to flag it. And if you're going to do it again, where did I go wrong? And what do I have to do to get it right?

Every farm has a different system although trying to achieve the same end, getting their birds away in the best condition in efficient time that makes doing ostriches economically viable. Essentially farmers muddle their way through the arrival period by handling the birds as they begin to adjust to their characteristics. Learning as they go is an important tool that farmers from all backgrounds utilise. Farmers learn in practice, by utilising dispositional knowledge (transferring knowledge from other areas in their life) which is socially constructed (Allan: 2002, 75).

Trial and Error

Ostrich farming in the early days relied heavily on trial and error as a way of learning.

> A lot of it was trial and error and ringing round, initially the first three years, we would ring the people in Rotorua because they had a vet up there that had been working with him and had done a thesis on kiwi which was another ratite. So he was using some of that knowledge. We struggled our way through and we lost a few.

Since then in New Zealand, data that is more scientific based has become available, as well as a pool of ostrich farmers who have been involved that will happily share their knowledge on ostriches.

> The main company down south have employed professional, technical people who have taken away a lot of the guesswork side of things and so much as they try to come from a knowledge base and then apply it to on farm practical problems they're having.

> Trial and error, going to field days, talking with other people and actually just talking to farmers on some general husbandry practices and be it livestock or the actual feed regime side of it, so pasture management those sort of things.

Trial and error has been a common way of learning how to farm ostriches. The information that is available today has not always

been the case, people were secretive in earlier days and this meant farmers had to essentially learn from their own mistakes: 'it's a huge learning curve, and we've made mistakes some have been costly ones' (see chapter two for further reference to secrecy within the industry). Despite this, farmers still assert the best source of learning is from others.

> Well you look at your different options and it's just a general discussion sort of thing and you try it and if it works then you go for it, a lot of it is trial and error though.
>
> It's just been trial and error, learning from our own mistakes and really just talking to other people as to what they do and you just take heed of it.

Trial and error is an example of learning by doing which involves learning through social participation. Certainly through trial and error, and the knowledge gained from making mistakes, farmers have shared their experiences with others. Trial and error creates a knowledge base where mistakes and failures can be seen as learning in practice (Allan: 2002, 91). Trial and error is a form of experimentation. Allan found the difference between lower and higher performing farmers is that higher performing farmers view their mistakes as challenges, and lower performing farmers just saw them as mistakes (2002, 110). Ostrich farmers who spoke of trial and error are similar to Allan's higher performing farmers as they continued to learn from their mistakes and pursued their practice with a lesson learned.

Other Farm Experience

Farming ostriches has similarities to learning any new skills in life. Some learn keenly from others, 'it's an interest in people that you learn from'. This farmer found that watching what other people were doing in any strand of their lives was interesting and they were able to learn from others in this way. Others believe their

most trusted source is their own knowledge because some people in the industry have told them false information about rearing ostriches.

> But when we met the man, we felt that he wasn't a reliable person to tell us about them. He told us they ate breadcrumbs and they wouldn't eat grass. So for a start if you're a farmer most people know that you've got to feed animals something. Or if you're a mother or father, you know you've got to feed your children something, so we couldn't believe that you just fed them breadcrumbs. When they came here, the first thing they did was start to eat the grass and they never lifted their heads and they were actually starving when we got them. They don't eat breadcrumbs it won't feed them and keep them.

Common sense also guides farmers in how they will care for the ostriches.

> Common sense tells you to watch them. Well it's like all other animals you're out there looking at them to make sure none of them are sick, they haven't been hurt or injured.

Ostriches still provide farmers ongoing challenges today 'you could be always learning with them and coming up against little problems that you're going to have to solve, and that's life'. This shows another way that farmers learn; these farmers have transferred skills they have learned throughout their lives and adapted information from varying sources into the ways they farm ostriches. The majority of farmers interviewed are mostly in their fifties and therefore have more life experience and possibly different approaches to learning compared with one farmer interviewed in their twenties. The lessons they have learned in other areas of their lives including some stock handling are applicable to how they learn how to do ostriches.

There is a slight difference in terms of the effect experience has on farmers' orientation to farming between rural and urban backgrounds. Schroeder, Fliegel and van Es (1983) investigated

small scale farmers and the degree to which a farm background is related to identification with farming activities, values and attitudes. The primary research question was whether or not small scale farmers without farm origins have a different orientation to the farm and the community than those who grew up on the farm. Data was collected in Illinois in 1980. Small farmers with non-farming backgrounds have the same choice of farming enterprise, but tend to be less agrarian in their values, and find farming agencies less useful (Schroeder et al: 1983, 363). They conclude the differences between farming and non farming backgrounds are very small because individuals have a common experience of access to education and mass media (Schroeder: 1983, 364). Bamberry et al acknowledges recognised prior learning (RPL) which is a useful way of formally assessing knowledge and skills gained through work and life experience (1997, 7). Previous informal learning can begin with growing up on the family farm and develop through learning by experience in working on a farm (Bamberry et al: 1997, 7). In Kilpatrick's study farmers said observation and experience were one of the most frequently used learning sources (2003, 156). These research inquiries recognise the importance of experience in farming practices. Ostrich farmers also rely on their farming experience to aid in their decision making.

The interviewees were a mix of those with rural and urban backgrounds. Those with rural backgrounds have years of experience of working with other livestock and easily took to ostriches.

> But if you've got experience with animals and animal husbandry, I believe you can look after anything.
>
> I just enjoy stock, I just think everybody that has stock, enjoys stock. The birds are just any other animal really, they're not that special but they are.

These farmers find it harder to explain caring for stock, because they just know. Some have over 30 years experience in farming and while seeing ostriches as a new challenge, they have previously embarked on other farming ventures. This experience includes how they manage their farms. Ostriches eat barley and some farmers grow barley as part of their normal farming practice.

> That was our normal farming practices that we would be growing grain and selling it…What we normally did in the past was we'd buy then we'd sow a paddock of barley and then we would keep the barley all winter in the silo out in the shed and we would keep it for the whole winter and at the end of the winter we would sell it. The reason we kept it was if it became a very hard winter, frosty, short of feed, snow you have to feed your animals so much more and we would've fed that grain out to our animals. It's like having money in the bank, you're not going to be able to get that in the middle of winter for your animals. So we knew that we had the barley there …and we had enough that would be enough to feed the ostriches as well, so that's what we did.

This is a cost effective way of running ostriches as these systems are already in place and the farmers do not have to buy their barley in. Because they had 'always done things like that', adding different stock to their mix was not a big adjustment.

> I think a lot of it is probably a bit of instinct, because as I say I'd been used to handling other animals, so I don't think it's that hard. If you understand a little bit about farming then I don't think it's hard to do, to change your technique to look after sheep or goats or whatever, quite honestly.

Those with urban backgrounds have a little more adjustment to make because their farming experience is not so vast. Their experience was generally limited to what they had run on their blocks before ostriches. Equipment was also more of a problem for those who were new to farming.

> None, other than having a block and keeping cattle, which I did prior to ostriches.

Having dealt with other livestock, some of that knowledge can be transferred to ostriches, knowledge like local conditions and pasture.

> While we were over there we visited other people, ostrich farms in Australia to try and pick up their point of view of how things were done and then we also just applied general farm management, like if you're looking after sheep and cattle, well you'd do the same sort of thing as looking after the ostriches, but they're a different type of animal. Provided you did the normal animal husbandry type thing, we found that basically put you on a good learning curve, but you just have to adapt to a different animal. (This farmer has an urban background).

Farmers with rural backgrounds made no mention about the difficulty of adding different livestock to their practice. However, farmers with urban backgrounds seemed to speak in greater depth about their adjustment time possibly because of their limited farming experience. Despite some farmers coming from an urban background, all have utilised their dispositional knowledge to strengthen their propositional and procedural knowledge (Allan: 2002, 126) to enable ostrich production viability. According to Allan, the farmers that left school to go farming are still highly educated because farming is an experiential environment where they read, consult, attend field days and experiment on the job (2002, 60). Similarly a minority of the ostrich farmers interviewed have formal qualification, but this does not limit their ability to transfer knowledge from other areas of their lives.

Written Information

Written information in either print or electronic form is an important continuing source of learning for farmers (Kilpatrick: 2003, 154). Written information is a continually accessible learning source to farmers, that they will sometimes use for a specific purpose (Kilpatrick: 2003, 154). In the early days, there were

articles in local newspapers and rural magazines about the potential of ostriches. Recently there have not been many articles, if any, promoting the industry. This shows the export company do not perceive a need to try and interest newcomers, that they are satisfied with current farmer numbers to benefit their business.

Farmers have access to written ostrich information through the internet, books and the NZOA manual. Written information is useful for ostrich farmers because sources of ostrich information is generally limited. Therefore, the production of the manual, by New Zealand farmers, for New Zealand farmers, is significant because it is the only relevant resource available to new farmers. The internet exposes farmers to international literature and experience on ostriches such as prices, availability of stock, farming advice and what different countries are doing with their ostriches. Just by typing into Google 'ostrich farming', a wealth of international information is available to the farmer.

> Yeah well I obviously started doing some research on it and looked up, as you do nowadays on websites, things about ostrich. And found out a little bit of information about it. Went to various sites in Britain and the US and Canada and South Africa and learnt what I could there, or studied what I could there and then made a commitment to buy in I think.

The internet can put farmers in New Zealand in contact with other ostrich farmers and marketers around the world.

Farmers know that model or case study farms that they read about are successful, but they are in a different country and many aspects of their farming cannot be transferred to New Zealand. Much of the information about ostriches comes from South Africa, since they have the highest farmed ostrich population globally. However, their information is not relevant in New Zealand because New Zealand has a variety of different conditions from climate, to labour. Farmers have also found that the South African farmers

they have been in contact with were not very helpful and did not want to share any information. Australia has also had a long history with ostriches, as they are feral there. In earlier days, some farmers did contact Australia to ask questions. The telephone is one way ostrich farmers attempt to access information, however the internet now plays the most popular means of accessing information. The internet was a starting point for many farmers.

> So I got onto the internet, read everything I possibly could about them and then when we went to the field day, the people from the farm were there promoting it and telling us what we should make out of it in dollar terms. They also guaranteed us a price.
>
> We got on the internet and read a lot from the American side of things and ordered a few books from that website and read up on them.

They were able to do research on ostriches 'I've obviously downloaded references from the internet from various sites, that I'd read in the early days'. From the internet, some have found links to books (some used Amazon or Trade Me) and some have even purchased ostrich books off the web. The internet is useful for farmers as it keeps them in contact with ostrich trends, prices and farming methods on a global scale.

There are few books written about ostriches and access to them can be difficult. In libraries there may be only two or three mostly written during the 1990s. Farmers mainly obtain ostrich books from other farmers leaving the industry. However many of these are written by scientists who have studied them in the wild, and focus on ostriches in different climates and have different farming techniques. New Zealand literature consists of a chick rearing guide (Broad: 1997) written by a farmer, which for many years was the only New Zealand specific guide. The ostrich manual (2003) compiled by the Association gives very good guidelines for

anyone new to the industry to follow. In earlier years, the Ostrich Association produced the *Ostrich Journal*, which had current information on the New Zealand ostrich scene, and provided contacts for things such as incubation, support, information, fencing and news.

Other sources of written information as commented by farmers are farming publications. Because they have rural addresses farmers are delivered all sorts of farming publications, such as *Straight Furrow.* Every farmer said they read some form of farming magazine at least weekly. Only one farmer had subscriptions to particular farming publications. One farmer referred to some magazines as 'junk mail' that seem to arrive in the letterbox daily. Kilpatrick notes that farmers utilise the reading of their junk mail as an ongoing learning source (2003, 158). According to Allan (2002) higher performing farmers interact with a range of artefacts which contributes to the fluidity of knowledge construction. Thus high performing farmers are proficient in areas of questioning, searching documents, critically analysing and searching out new science (Allan: 2002, 94). Written information is one way farmers can learn about new technologies in the farming realm, and from the interviews it is apparent these farmers do read the free farming publications. These are the only forms of reification that contribute to the learning process for the ostrich industry, due to the lack of relevant New Zealand information about ostrich farming. Therefore, farmers use participation as the primary way of transferring knowledge. Written information is important for the transfer of knowledge. It is widely used in established rural industries such as sheep, beef and deer (Butcher: 1998, 13). In opposition to this, ostrich farmers have a problem locating any relevant information about their practice, specifically in the New Zealand context.

Field Days

One way farmers can stay up to date is by attending field days where many issues are discussed by current farmers. Field days also provide farmers the opportunity to look at other farms, which as Moore discovered farmers are hesitant to be the first to adopt a new technology (1990, 4). Farmers make the decision to attend a field day that they think would be helpful to their business, also taking into consideration, time, distance and cost (Fonseca: 2001, 28). Field days have been extensively used as a way of transferring information to farmers. However, the farmers Butcher surveyed rated discussion groups and field days low in terms of quality of information transferred through this method (1998, 14)[19]. Field days for the ostrich industry used to occur more frequently than they do currently and have continually been a time and place where farmers can come together to discuss practices.

While there is a lack of information available people are able to gain knowledge from a greater variety of sources compared to the early days. Some started out working through the export company who then pointed them in the direction of the ostrich Association, which allows access to a useful and necessary body of people with knowledge and encourages people to contact others in the industry. Through the Association and export company, field days are run which provide the best source of learning for farmers[20], which is the opportunity to bring farmers together where they can talk.

> yeah, it just pulls everyone together again, see what the other people are trying and that there, you can be talking around about something and that there and say oh no I tried that there and it didn't work. So it saves that person at going down that track.

[19] Butcher found the preferred sources of learning about new technology are consulting veterinarians, using private farm consultants and 'specialists' (1998, 13).
[20] Compared with Butchers preference for learning findings, ' Consultants perform an important link in the transfer of new information and technology to farmers' (1998, 14).

The Association and the export company are helpful in creating the opportunities for farmers to get together and talk, organised by either party. The field days are held at a farmer's property, which gives attendants the opportunity to walk through someone else's facilities and see how they are doing it. Obviously, in earlier days field days were more frequent with a greater turnout in numbers. Now field days are held about every two or three months, attended by those mostly already involved in the industry.

Field days can be advertised in ostrich newsletters or in local newspapers. The purpose of the field day can vary from trying to entice people to farm ostriches, to just a get together of current ostrich farmers. If it is advertised in a newsletter, the general public will have no knowledge of its occurrence, these are generally for Association members only, but if an inquiry came to the Association they would invite the individual to attend.

> Like if we were arranging a field day, depending on whose running the field day. If New Zealand exports are running the field day it's open to anyone, but if the Association is running a field day it's mailed out to all the people around that area, right, and they may advertise if they're doing a bit of a recruitment if they're trying to get more people interested.

By advertising in the newspaper NZOE protects its interests and attracts new people to join and expand the current industry. These field days are open to anyone who wishes to attend. The main purpose of field days as identified by farmers is to attract interested people into the industry.

> We have had finishing field days, I think they had one only about a couple of months ago. So it's those sort of field days that will attract and sell ostrich farming to other larger farms.

Attendants at field days include a mix of current farmers and other interested individuals. One farmer said 'Yeah you get people

that come that are purely parasites', that suggests not all farmers that attend are genuinely interested in ostrich farming. Current ostrich farmers also go to these, not only to catch up with fellow farmers, but the topic of the meeting may be of consequence to their practice.

> But we're not new, or going to be new business because we're already there farming it, so you get people that go that are interested. I mean the next field day if they have one in the spring we will go to it.

The farm that hosts the field day is usually chosen by the Association and asked if they would like to host a field day.

> We were prepared to do that in return for the fact that they had helped us and we had been to other people's field days. Therefore, you are helping other people to learn and hopefully get more farmers on board.

Because farmers have been to many field days, not only about ostriches, they generally know what to expect. Currently the farmers that attend ostrich field days are not necessarily going for the explicit learning aspects. Because so many have been involved for a number of years, some are attending for the social element. This is the primary opportunity that ostrich farmers within a region can come together. Farms that are selected for field days for ostriches are usually successful farms in whatever segment of ostrich farming they produce. Successful ostrich farms are useful for others to look through and gain information about their practices.

Field days are most often held in the afternoon of a weekend. Attendees arrive and gather in either a shed or building where an organiser of the field day will begin and introduce the proceedings for the afternoon. The host farmer is usually the main speaker where they speak about their practices, and how they do ostriches on their farm. Questions can be asked throughout this time

concerning the particular topic of discussion. After this attendees walk around the property, where the ostriches are kept. Guests are free to ask questions to the host during the walk through. This time allows guests to view how others run ostriches, the resources and facilities they have adapted, and see for themselves what systems successful farmers have in place. The farm that hosts the field day arranges an afternoon tea for after the discussion and walk through.

> Then I went down and got all the food and got it all organised and provided everything on the day for them.
>
> We had a shed meeting here about two weeks before. They went out to the shed and we had a talk and you know anybody that had any questions and then we went out to our birds and we walked all around them and had a look at them. Then we went down through and had a look through our yards, then they came in and out and had a cup of tea. It was quite a good day.

Not many current ostrich farmers have hosted field days but they try to attend all throughout the year. It could be said field days offer farmers the chance to steal knowledge by watching and listening to host farmers talk about their practice (Allan: 2002, 112). The significance of stolen knowledge is that it enables participants to understand and engage in a social practice within this particular learning environment.

At the field day every farmer learns something. They leave with a greater knowledge of ostriches, how the industry works, expectations and ideas for their own property, and strengthened their social networks.

> We went down and listened to everybody saying you put a paddock of certain size and you must have a metre gap between the paddocks so they don't fight with each other. So we gradually built all the breeder pens across the back.

Field days are where farmers have learned how to care for and rear ostriches successfully.

> So we fed them grass and when we went to the ostrich field day that's what we went to learn how to really look after them, we found out that they had to be fed grain. So we came home and started feeding them barley and when we fed them barley they got healthier and looked better and put on weight. We weighed them to see what they were doing and they did fine, once we started feeding them properly. So the man that had them before did not feed them properly.

Farmers that attend field days as a starting point before investment make their decisions about investment from there, as a result of the information they acquire on the day.

> … we kept them for a while and found that we were quite interested in them and then I saw a field day coming up that people were having. So I thought we needed to find out about them before you invest money in doing it, so we went to a field day and that's when we learnt enough about them to decide that it was a worthwhile investment to try. So a month or two after that we bought our first lot of birds.

Farmers asserted that they learned the most by attending field days. 'Oh, I'd say we'd learnt more off going to field days and visiting other establishments'.

Field days are informative and open events, where questions are asked and others offer opinions and solutions. There may be only one or two couples that attend who are seriously considering ostriches.

> So that was where we first went to the field day, brought home the literature that they gave out and then we went to the website, I did and read it all up and looked for more information about them.

This gives these people the opportunity to meet 'real' ostrich farmers and discuss real everyday issues. This may be their only opportunity to walk among ostriches before investment. Current farmers also benefit from attending field days. While they may have heard the information being presented previously or they are

good friends with the hosts, they catch up with other ostrich farmers, discuss concerns and gossip with them and benefit from surrounding themselves with like-minded people. This is a prime example of participation using Wenger's social theory of learning (1998). Farmers come together, ideas are transferred and through social participation, learning occurs. Field days are the most useful, local knowledge learning environment created and managed by ostrich farmers. However, in Butcher's article, based on a survey from farmers from six sectors, field days are reportedly used extensively as a way of transferring ideas in traditional farming enterprises but farmers lowly rated the information gained through this method (1998, 14). In contrast field days are the main social and learning events that occur with any regularity in the ostrich industry, therefore field days are highly rated amongst players.

My Experience of a Field Day

In May 2005 I had the opportunity to attend a field day in Canterbury about chick rearing. Several members of the Association, some of whom had been members for some time, attended this field day. Learning in the same capacity as farmers aided my understanding of how farmers learn how to farm ostriches. Most of these people had experience with chick rearing and added to the discussion. Everyone was really friendly and enthusiastic about ostriches. By attending the field day I was exposed to information, resources and farmers that I had previously had trouble accessing. The field day was my way into the industry, from there my thesis progress really commenced.

When I arrived, the host greeted me and led me into the garage where attendants were seated in a semi circle facing the current speaker. The correspondent who had invited me introduced himself and then I introduced myself to the group. The farmers took turns at introducing themselves and partners. The main

speaker spoke about his husbandry practices that he and his wife adhere to, such as what sort of incubator they prefer (brand). He went through a step-by-step process. For example, the candling, how and where he weighs, how he records the weights of eggs, their numbering system, how much detail he likes to keep per bird. He spoke of how long he kept them in the hatchery, the lighting, temperature, how to watch for air pickers (a chick pretending to eat), what he uses for food, where he gets it, and water containers. His wife said she gives them yoghurt and stones before she sends them out. They gave all sorts of advice. Others spoke up and described the same practices, detailing how they differ. For example in the brooding room if they use newspaper, hay or sand under the matting. This description of their practices was useful for attendees, as they probably did not know particular details of the host's set up.

There was a loose agenda in progress. From here, discussion turned to bigger issues of transport, prices and pasture. Possible prices for the coming season were handed out to gauge farmers' reactions. At this time, it became apparent to me that the whole industry is interdependent. I realised the small size of the industry and that I was surrounded by the enthusiastic and long standing members of the Association. If farmers are not making something, they will not stay in and currently grower numbers are very small Canterbury wide, compared to earlier times.

There was a short break where the host showed some of his brooding and hatching facilities. For some this was their first chance to see this host's facilities, which they were interested to observe, although they were currently not in use. Others just spoke amongst themselves. The meeting then divided into a group who went inside for afternoon tea and another who wandered around the farm looking at the ostrich facilities. People talked and asked questions about future improvements to the system and specific

technical questions regarding husbandry and pasture maintenance. We looked at the chick rearing, breeder pen set up and weigh station. Then we all moved inside for afternoon tea.

Discussion over coffee was about ostriches. These people all know each other and have done, for most, a number of years. Discussion then turned to the upcoming annual ostrich conference being held the following month. All said they would attend. During this time I talked to a lady who was very interested in having me work at their home during their chick rearing. I ended up following this couple home to their property, where they showed me their ostrich facilities. They lent me the ostrich books they owned. The field day was very enjoyable and full of a variety of information for all those that attended. Everyone came away having learnt something new. I had found my path to the players in the current industry. There was plenty of time for people to ask any questions and discuss any prevailing, or not so, matters. Everyone was very friendly and open, which makes for a good environment for learning, which farmers prefer (Moore: 1990). Field days are being used and recognised as a useful way to bring farmers together to discuss current issues. 'There is an emphasis on the use of learning groups through which land managers and others can come together to share ideas, and explore new options to improve their management of common problems' (Allen and Kilvington: 2002, 58). Being part of the learning process in this instance was useful, as farmers who attended this field day learned something new, as I did.

Other Annual Conferences

Every year the Association holds an annual ostrich conference. Over the years, the conferences have been in various locations around the country, with a variety of speakers. Each conference is organised by a conference committee consisting of

members in the region of the location. They organise the whole weekend. The ostrich conference is an annual coming together of interested ostrich farmers.

The committee comes together to discuss and decide on speakers and how the conference will flow. The committee is responsible for choosing speakers that farmers would be interested in and approach relevant people that would offer farmers new and interesting knowledge. Each year the committee tries a different avenue, so speaker subjects do not overlap from previous years. Part of the conference is the main speakers. These speakers are experts in their field and are paid to speak at the conference. Sometimes a farmer at another association event has heard these speakers and he speaks up and forwards the idea to the organising committee.

> And also a lot of people have heard a lot of people talking from other [farming] associations and have met these people and brought the idea forward that there was a lot that could be learnt from these people. So that's how they get round to selecting the different people.

Over the years, farmers have heard from a variety of speakers who spoke about minerals in grasses, fertilising, meat cuts, animal husbandry, software, genetic recording and imprinting and even about exporting beef and lavender farms, and how they can be paralleled to the ostrich industry. Another main part of the conference is the report from both the North and South Island marketing companies. Speakers from the companies talk to farmers about market conditions, what has happened over the previous year and what they expect for the coming year.

> So the market analysis is usually coming from similar people because there are only a couple of main marketing companies.

In earlier days, the annual conference had at least 300 people in attendance. These conferences took the whole weekend that included hands on experience in workshops.

> Also we found that sometimes those two day conferences you were trying to absorb too much. Quite a lot of it was lost; there was too much technical stuff you were trying to pick up, whereas by having one decent good speaker it was better. So you could actually absorb and you had time to sit down and discuss it, so any other points that you thought of once the speaker had finished that you had a chance to intermingle. Whereas if you were sitting down and had session after session after session a lot of that information I felt was wasted because people's minds can only absorb so much.

Several farmers spoke enthusiastically about the year 2000 conference held in Timaru; it was a three day conference. During this time farmers saw a fashion parade where ostrich products were modelled, and they went on buses to different farms in the region. The men learned how to slaughter an ostrich and the women learned how to dye feathers and decorate the eggs. This is a classic example of gendering in agriculture. As Morris (2002, 108) asserts tasks are gendered because 'some jobs are considered to be more appropriate for women than others'. In this example of the ostrich conference by sending the different genders to learn about separate tasks reinforces one's gender role. Slaughtering animals is a particular task that is usually reserved for males as this type of job has a higher status, also woman are associated with caring for animals (Morris: 2002, 109). For the evening meal, they were taken on buses to Mt Cook, where they had a dance and stayed the night at The Hermitage.

The conference in 2002 was held at Gore. Farmers went through the processing plant in Gore and visited the big farm at Five Rivers, as well as the hatchery in Lumsden. Farmers also got a maroon/purple (Southland rugby colours) towel for attending. The towel appeared to invoke memories of nostalgia of better times and

a brighter future. In 2003, the conference was held at Lincoln and the social evening at Jade stadium, about 70 people attended. The 2004 conference was held in Christchurch and approximately 60 people were present.

The annual conferences are a time where ostrich farmers from throughout New Zealand come together and talk constantly about what they love. The speakers are appropriate to farmer needs and interests. It is the only chance farmers have in a year to 'bring up their problems or whatever, or things are going good. It's a bird weekend. It's ostrich and that's what you eat, sleep and everything ostrich'. This is another example of participatory learning that is a successful means for ostrich farmers to learn about their practice. Farmers keenly remembered the social aspects of each conference they had attended. This shows the importance of participation in the learning process. Conferences are an example of an external training activity. This method of learning is employed by many industries, as the primary function of conferences is to learn, meet new people and network for the future in an area one has an interest in.

Annual Ostrich Conference – Blenheim 2005

In June 2005 I had the opportunity to attend the annual ostrich conference. Conference is the main learning experience ostrich farmers have during the year because regional opportunities are increasingly limited. Farmers were seated in a semi circle around the speaker. Information was presented in a lecture style, with power point presentations, however questions could be freely asked at any time throughout. I was busy taking notes most of the day, but farmers listened, plus we were given a booklet with summaries of the presentations. During the breaks farmers learned about other ostrich farms by talking with other farmers from all over New Zealand. During panel sessions successful ostrich farmers

described their practices and some successes and failures they had had on their farm. Talking about their practices, as well as learning information about things like barcoding and lucerne all contributes to ostrich farmer learning.

Conference is the time where farmers can learn all sorts of information and make contacts with other farmers throughout the country. It is the main chance in a year these farmers get to converse with others, exchange ideas, find out the issues and the market conditions, and to discuss better farming practices for all. It is a learning weekend, as well as a catch up.

When people arrived at registration in the morning, they were handed a pack, which contained notepaper, map, pen, booklet containing notes from speakers and a list of the weekend's proceedings (see appendix two).

The conference was opened by the Association president, to all 37 Association members, plus myself. The morning session was a speaker on traceability[21]. Traceability is a verifiable method of identification at all stages of the supply chain, which uses identification numbers to link products to the source. Traceability affects ostrich farmers because New Zealand ostrich is exported and Europe and the US require a traceability system in place. Questions were asked from the audience like 'how does this come back to us' and 'how do we record it'. The speaker illustrated that this practice will be relevant to the ostrich industry within the next 24 months and will be a requirement for MAF. Essentially traceability is a risk management strategy, which is currently transforming, and the speaker gave us a glimpse into the future of this technology. He was a very good speaker who engaged the audience well, and used a variety of media as he taught us about this new technology.

[21] Traceability is not a issue specific to ostrich farmers. See http://www.maf.govt.nz/mafnet/animal-identification-and-tracing.htm for more on traceability in New Zealand's meat industry.

During the breaks, everyone intermingled and chatted with people they may not have seen since last conference. The panel sessions followed, the first was *Early chicks: how do we produce them? What do we feed them on? (Special starter)*. Each farmer spoke about what they feed their chicks, how much it costs, where they get it from and for how long they feed this to them. This panel's message was that it is important to promote good feeding habits. The audience asked questions, which led to the discussion of what flooring material is used for chicks and how to avoid skin damage. The next panel was about tagging. There was much discussion about what the preferred tags are, why and where to put them. The following panel discussed scouring. These panel sessions enabled 'expert' farmers to speak on their practices and experiences, and the audience could freely ask any questions. These farmers are known within the industry as masters of their practice, thus why they were asked to speak. This time was useful for farmers because it was centred around practices that farmers use on their farm, which all participants were able to relate to. Additionally, the setting allowed audience members to add in their experiences or questions at the appropriate time.

The afternoon session began with a speaker who spoke about *Lucerne for ostriches*, although his experience is with sheep. He covered topics like optimal grazing management, seasonal management priorities, stand maintenance and the role of complementary species. Everyone was really interested and the audience asked many technical questions. The afternoon panels were about markets and avoiding pelt damage. A very brief AGM was held, where no new activities were discussed and the Association's business was minor. The president closed the annual conference. After that, some people went to the pub, and then carried on to the restaurant.

At the restaurant, we were served ostrich broth, ostrich fillets, ostrich sausage and groper, and for dessert a lemon meringue pie (10cm high!) made from an ostrich egg. Most people at the conference during the day attended the dinner. Farmers mostly sat with their partners and just enjoyed themselves, sometimes talking about ostrich.

The next morning we had two farm visits. This gave farmers the opportunity to walk through other peoples facilities, which are on a similar scale to their own. They could ask questions of the owner. Just to see how others do ostriches is useful for farmers. For some it inspired change in their own systems; for others who are not involved in that part of the process it was just interesting. They saw the many uses of the smallholding, how they divided paddocks, what they had in them, and learnt what their future plans for this land were. That afternoon we went on a wine trail. Many farmers went home before this, but the 14 that stayed, relaxed and enjoyed some of Blenheim's wineries.

All farmers that were interviewed learned something from their weekend in Blenheim. It was very worthwhile for all those that attended. Most farmers I interviewed when asked about the conference talked about the speakers and what they learned from them.

> I learned a bit about lucerne, it was interesting about in the morning session, regarding barcoding and that there. I actually found that quite fascinating that, about the reasons why, like oh you sit down and say oh it's a barcode. But, unless you sit down and that fellow explained why it has come and where it's going you actually appreciate what it actually means now, whereas before it was just a barcode and who would actually think. I would have never thought that you could have spent an hour or two that morning talking about it. You know, it's a barcode, but it got quite fascinating, where it's come, the reasons why, what it actually means and that there and how they interpret it.

> So that was interesting to learn a little bit about pasture, because I guess we tend as lifestyle block holders and not real farmers we probably tend to not go into that detail as much. We probably don't read a lot about pastures.
>
> Yeah and when you go back and read that, you actually remember what he said and bits and pieces. I actually spoke to him before the session because I had some questions of my own that I wanted to know about. You've already got a basic knowledge about lucerne right, and some of it you just turn round and say I don't really need to know that, I've been told that it's not super important and then there's other parts that are important.
>
> Well, the chappy on the barcoding thing and that was very good and how it could relate to setting up identification of birds, traceability, it was one of the best things that I got out of the conference.

These comments suggest that farmers who attended learned a great deal of knowledge about various subjects covered over the two day conference. Because many small holders are from urban backgrounds learning about the lucerne will help their farming practice, not just in terms of ostrich production. Many aspects of the conference were important and interesting for farmers. They increased their knowledge on pasture and the impact traceability will have on their lives shortly when it is enforced. The farmers thought this particular year's conference was worthwhile and enjoyable.

> The whole conference was, it was worth every minute to go to that conference, I think it was. Just to talk to those people, they're particularly nice people, we're interested in people and they're all sorts of different people and we enjoyed meeting them. But we've all got a common interest that we did learn something from.

An important part of the conference is the social element, where farmers take great pleasure talking about their practice with one another (Newton: 1999, 71). The conference facilitates a time in the year for ostrich farmers to come together where technical issues

are freely discussed among members of the Association. This example of group learning is a means of participatory learning (Allan: 2002, 13). Reification from the conference is used by farmers when they want to refresh their memory on ideas brought up by speakers. Farmers can recall learned experiences by flicking through conference notes, however the impact or affect of this reified information is more difficult to assess. As an example of how people learn I want to discuss one session in more detail.

Traceability – Case Study

At the conference, the speaker who talked about the issue of traceability educated farmers about the future implications it will have on them and the industry. Since that time, some farmers have taken steps to begin ensuring traceability is implemented at their farm. One farmer said he had gone to his stock feed company and asked that they put batch codes on the feed they give him.

> So when he spoke to me about it I turned around and told him that they are putting batch numbers on the product and he was pretty rapt about that, because it did concern him. The other thing is I can turn around and when I sell the birds to …I've got traceability at my end, and although we don't like it, it's the way the world is going, everything has got to be traced. At least I can turn around and say I've done my bit. There goes all the feed that these birds have had are on batches 64, 32 and 59 right.
>
> And if there is a problem within one of those and say they find high levels of mercury in that there, they can go back to the stock food place, and say hey we got a problem here.

The speaker essentially brought to the attention of both exporters and the farmers what the future will hold as a result of traceability. The speaker sparked an interest with farmers because when asked the farmers were able to convey how serious traceability will be for them.

> Main issues for the future are things that you saw at the conference with traceability of food. I think one of the main issues that we've got to probably tighten up on as a group is to determine whether in fact we can trace the barley that we buy. That we can trace the ingredients that our stock food producers sell to us. There are a number of ingredients in them, do they know where they all come from, are they all GE free. I think that's something the industry faces, that we've got to know about.
>
> It's not so much, most of us turn around and say it's an absolute waste of time, but if at the end of the day it's for the markets, it's important and if they're going to buy or pay an extra $1 a kilo, because you've got traceability, you're going to do traceability.

The export company also realises the importance of traceability for the future and have begun informing farmers on what future requirements will be for them. This includes farmers completing animal status declarations, when stock moves between properties and to slaughter. These forms will become mandatory in early 2006, so the company is attempting to teach farmers the new rules and get them into the practice of using them. Having stock traceability is important so that if an issue occurs with the product the whole industry within a country is not jeopardized (NZOE: October 2005)[22]. This is an example of the impact of one conference topic. Through a mix of participation and reification farmers have adapted to this change in their practice. Another learning strategy is the use of an ostrich expert to teach farmers new ways of running their birds.

An Ostrich Expert Brought to New Zealand

A few years ago, after ostriches were commercially established, NZOE extended their services to farmers in the industry by bringing out a zoologist who specialised in ostriches from South Africa. This zoologist had studied ostriches in the wild all over

[22] This was mentioned in the NZOE newsletter that goes to every farmer.

Africa and spent 25 years as an avian research scientist. He came to New Zealand three times and met with NZOE's clients at their homes. There were also meetings held in a hall in Lumsden, attended by 60-80 farmers, at which he put forward his ideas on feeding, husbandry and shelter. Many of his ideas were useful, because farmed ostriches can still display wild tendencies.

Some farmers used his expertise and refined their practices accordingly; others did not. His feed recipes were based on the natural resources available in South Africa; therefore, some farmers did not think that his recipes would be suitable because New Zealand's environment is different. His opinion on how chicks should be farmed led some farmers to build purpose-built chick sheds, rather than continuing to use their transformed sheds. He thought chicks drink more water if their water supply is warm; this led some chick rearers to install hot water cylinders in their chick sheds. He believed chicks perform best on concrete; farmers lose between one and two percent of chicks this way, compared to chicks raised on grass, where farmers lose 15 percent or more.

Bringing an ostrich specialist out from South Africa was useful for farmers, especially those that had him out to their properties. He offered advice that had not been experienced before in New Zealand for the ostrich industry. Farmers who embraced this learning experience increased their propositional knowledge (Allan: 2002, 126) and some followed through on the ideas presented by the expert, demonstrating procedural knowledge in their practice. This is one learning strategy which is also employed by other industries such as sheep farming.

Sustainable Farming Fund (SFF)

The Sustainable Farming Fund is set up and organised by MAF for the purpose of providing funds to projects in agriculture. Government agencies encourage the forming of communities

because they are aware much of what makes a good farmer is never written down, just stored in the farmer's head, thus the creation of a community allows ideas to be shared (Wilkinson: 1996, 6). The New Zealand Ostrich Association first became interested in this pursuit for funding around 1999. Colin Brown from Agriculture New Zealand (a training organisation that provides agricultural and horticultural training) organised the proposal to MAF (NZOA: 2003). In order to receive the funding the proposal suggested ways in which the industry will bring farmers together to discuss issues relevant to the particular industry. The application was accepted and the Association was given a $93,000 government grant (http://www.maf.govt.nz).

> It's quite complicated how it all works, MAF pays, you've gotta do so much yourself, the Association has to do so much, right and MAF will put in so much and they work out how many hours members and that there will partake in, on these experiments and that there and what they are going to do. And that there works out at a value, a dollar value and then the government or MAF will put in some money as well to help cover the other expenses.

After the Association received the grant the Executive at the time then met with a farm management consultant to decide what to do with the money. Because of the lack of information available about ostriches, the money could have been used wisely for many projects concerning ostriches. There are many subjects in terms of health, growth and farming that could be explored and would be very useful to ostrich farmers. The Association decided what to spend the money on and also identified further research topics which would offer information to farmers about how to produce ostriches more efficiently and effectively and how to integrate ostrich farming with other farming ventures (NZOA: 2001). The first project the Association executed was the New Zealand Ostrich

Manual and setting up of the NZOA website. The second was using blood samples to determine the mineral levels of a healthy ostrich.

The Manual

The manual is the most comprehensive New Zealand specific literature on how to farm ostriches. The manual was produced using the funds of the first Sustainable Farming Fund grant the Association received from MAF in 2001. The manual was designed to give newcomers knowledge of how to best achieve producing ostriches on a commercial scale. By the time the manual was produced in 2003 many of the contributors and monitor farms[23] had been in the industry for several years and were therefore able to offer their experience. As a result these farmers did perhaps not get as much out of the manual as they could have because it is aimed at newcomers.

> Pure and simple it's written for people getting into the industry.

These farmers already have established management schemes in place that work for their property and lifestyle. One farmer referring to the majority of members who had been in the Association for a while said 'it would be debatable on how useful it is'. Therefore, it could be said that the first instalment of the Sustainable Farming Fund was not used in the best way for all members of the Association, but the aim was to encourage new people into the industry. Some people liked the idea of the manual because they thought it was a good idea for the greater good of the industry rather than just themselves.

[23] A monitor farm is a farm which is chosen to run trials on, that is typical of the region. Over the time of the trial the monitor farm informs other relevant farmers through field days and newsletters. The monitor farmers are assisted through the process by a community group which comprises local agribusiness people including vets, consultants, farmers, scientists, financiers and processors. http://www.meatnz.co.nz/main.cfm?id=40

The manual is presented in the form of a ring binder, which is to be read as a reference text, not a book (NZOA: 2003). New-comers to the industry since 2003 have read it and referred to it at different times for dealing with specific problems.

> I have read it. I've looked in it for things I've needed, yes, I have, yes, I have read that. But I often think that the practical side, I get more from the practical, hands on thing.

The manual is a culmination of experienced farmers' knowledge on the best way to do ostriches and make profit. However,

> no matter how many times you can read the instructions in a book, it doesn't always mean that you're able to put into practice, not all people could put into practice what's in the book.

Not all farmers could learn from the manual, some would learn better with hands on experience. Farmers come with different skill sets and some are more adept at learning by doing, than reading an example and being able to successfully follow the outlined model. While the manual is by far the best information for newcomers it is also useful for them to combine this reading with practical experience, if possible in the form of handling the birds on an existing ostrich farm. Newcomers need information on how to do ostriches. The members of the Association at the time had no New Zealand specific literature that offered basic ostrich growing information at all levels. They had to learn everything through trial and error and discussions with others in the industry. There are chapters on breeder management, incubation, chick rearing and finishing. Other chapters detailed bird health, pasture, fencing, yard design, transport and nutrition. The executive at the time were the instigators of the flow of manual production.

> We participated in field days and doing experiments and bits and pieces and I was in the executive when that was done and we proof read it and changed some bits and pieces.

Their knowledge was invaluable to the process of being able to produce the manual, and contributors could view holistically the benefits for the entire industry.

The Website - www.ostrich-association.co.nz

The website was set up in 2001 using part of the fund. The initial plan for the website was to share information amongst farmers all over the country.

> But at least that will be a good way of communicating with everybody who is all over the country, an excellent way. All sorts of information and what have you's can be put on there and bring us closer together that way.

The website offers a brief introduction to ostriches in New Zealand, the benefits of joining the Association, ostrich facts and products, and the ability to buy and sell ostrich online. The website has gone into decline, as it has not been maintained or updated, partly due to lack of funding.

Blood Sampling

Blood sampling was the second part of the Sustainable Farming Fund. The members of the Association came together and decided that the area of how ostriches grow and what is a healthy bird was important for every ostrich grower. That information is not available anywhere in the world.

> But there's nowhere in the world that can turn round and say a healthy ostrich blood is this and is made up of this, this, this and this and these are the trace elements and this is the levels and all that they should be at.

Before this study by the Association veterinarians had nothing to compare against once they took blood from the ostrich.

> If you've got a sick bird and you take that blood sample you've got nothing to match it against, you've got the sheep, the deer, every other industry, right, has what you call guidelines, right, this is the blood for a healthy sheep and this is what it's made up of. Now when you take a blood test, same with humans, when you take a blood test, you can say no, no that's really low, it's lacking in that there or this here. And then you can steer your way to the problem but with ostriches there's nothing.

In the past farmers have used veterinarians in times of need for answers. If farmers have sick birds and cannot understand why, they went to the local veterinarian for answers.

> They know how to take blood out of anything, but it's all very well doing that, but once you've got it what do you do with it? And I have spent money with vets and they've come back and they say it's normal, normal to what, what are they basing it on?

Some farmers have spend hundreds of dollars on veterinarian bills and still do not know what they did wrong, and what they can do better so a problem does not occur again. At a time like this the farmer would ring others in the Association for advice, as they probably know more than the veterinarian does. The Association used the government grant to help overcome this problem.

This project engaged a professor from Lincoln University to do the sampling and analysis. To enable this study to take place, some ostrich farmers had to offer some of their birds to be slaughtered to gain liver samples. Four monitor farms offered their birds to the study on a voluntary basis and samples were taken from 10 birds at different stages.

> What we have been doing up till now is we've been taking blood samples from various birds around various areas. They've been analysed and once they've been analysed and the professor and the vet that are doing it will determine whether the information can be used or not. As they have done in other industries both deer, sheep and beef.

The results of the study were reported to ostrich farmers who came together in Christchurch with the veterinarian who was involved[24]. Most of the results just seemed to be numbers of different minerals. Now the data that a veterinarian would understand exists, so farmers can have confidence in veterinarians that is based on some New Zealand ostrich specific data, if they were to use veterinarians for testing. They were only testing on live healthy birds so the results show a normal range for the different elements they tested on. The results are to be published in a peer reviewed journal, a veterinarian journal and they will be turned into something that is readable for farmers.

Some farmers felt the money could have been better spent. Perhaps they cannot see any direct benefit from the Association's use of the grant money.

> Um I think it just did some research, but I don't think it paid for much. I don't think it helped the industry much at all, didn't do any advertising or promotion or try to get anything working. It probably wasn't used in the best of ways.

These are some issues faced by any new industry, while there are so many studies that have yet to be done about ostriches the Association chose to use the Sustainable Farming Fund money for this exercise as they could see the benefits. The Sustainable Farming Fund is interested in supporting and monitoring practices in land based sectors that bring together communities of practice. The grant mainly boosted the industry's propositional knowledge through the manual and the blood sampling and the website created a virtual community for all ostrich farmers throughout New Zealand. As a result farmers have the ability to transform this into procedural knowledge. These forms of reified knowledge have been used by farmers to enhance their community of practice. This is similar to

[24] Held in September 2005

Allan's (2002) farmers' experience in the sheep/beef and dairy farmers, in that through discussion group opportunities, ideas have come out that have impacted their practices.

The Ostrich Network

Those in the Association generally agree that the ostrich network is the Association. The Association provides a formal structure for which the informal learning can take place. These farmers ring each other on some form of regular basis, from once or twice a week, to every fortnight or so. Ostrich farmers that have developed into friends get together at each other's house, for dinner, or they may just call by for a drink.

Farmers mainly keep in contact because they run ostriches. The exporters may receive questions that are better answered by those that have experienced the problem.

> I think … is a good man for putting people on, I've had people ring me several times. I've been on the phone for an hour, hour and a half, talking to a man.

Therefore, they reinforce the network by passing on the phone number of another farmer and chances are they will not just talk about the issue they originally rung for.

> Don't know the man from a bar of soap, and he said, he rung me and said, he was talking to …because I've got a bird who's got a ripped neck and…told me to ring you because you'd sown one up and how you'd got on doing it. Well that's good, but that's through …really, he would've told that man to ring us and then when he was on the phone that night, as I say an hour and a half, I talked to the man as if I knew him. He was really interesting, we spoke about the pellets and the different things that are coming up that we think are important. And he's got a man coming shortly that's gonna tell him what he fed them on, he used to farm 900 or something and he's going to tell him what was made up in the pellets that he fed them.

Through an occurrence like this, the ostrich network is strengthened to another source for those particular farmers. They will again speak as a result of the export company forwarding their inquiry onto a farmer who has had a similar issue.

An ostrich network also exists because farmers only do one segment of the process. Farmers pass their birds onto another property for further raising. While the export company has a hand in organizing some of the transferring of birds, other farmers have taken it upon themselves to organise bird movements.

> And it seems that down south they are getting themselves together, like the Ashburton area, they seem to be getting themselves together as a group, so that someone does the incubation and they know who they're going to pass their chicks onto. We need to get that going.

Because there are so few people now that can do each part, farmers can organise between two or three farms how the birds will go from egg to slaughter. These set ups for the movement of birds happen 'normally over a beer' where dates can be arranged so each farmer can organise their feed and any other arrangements required. Organising bird movement without the use of the export company not only saves money, but if the set up works well, the same option may be employed the next year. For many farmers the ostrich network began by joining the Association and has developed over time. Farmers that live geographically close to one another have formed even closer ties. The ostrich network continues to exist because there are many events led by the Association and the friendly nature of all ostrich farmers that has reinforced and enabled growth of the network. Because of the way the ostrich farming network is structured, these farmers may be more friendly with one another compared with other farmers because they know each other. Additionally, lifestyle block farmers have different learning and social experiences compared with full time farmers. Through

membership in the ostrich network farmers have participated in their social community. Their involvement in the community has led to an 'identity of participation' (Wenger: 1998, 56) because of the mutuality within the group.

Conclusion

All new industries have an intensive learning period, where mistakes are encountered along the path to setting up successful practices. Identifying the locations and in what capacities learning takes place shows how the industry has developed to where it is today, and how information is transferred to, and between farmers. Informal learning is very significant for farmers because that is their main learning source. Through sharing information with one another and using the Association, New Zealand farmers have learned how to produce ostriches efficiently. This chapter has discussed various learning opportunities that have been available to farmers in the South Island over the years. The ostrich industry is mostly focused on participation rather than reification, although they do not exist in isolation. The relationship between propositional, procedural and dispositional knowledge requires a mix of each for farmer learning to transpire successfully. These farmers identified that talking with other farmers was the most significant learning experience that had the greatest impact on their farming practices. This shows that field days and the annual conference are the most useful learning opportunities because farmers can network with other farmers, which has enhanced their learning. But other opportunities such as the expert who studied ostriches in the wild and the Sustainable Farming Fund grant have been valuable learning tools for ostrich farmers. Participation is key to ostrich farmers' learning practices. As described ostrich farmers have an

array of learning environments that aid farmers' ability to network with other farmers, which as the literature suggests (Vanclay: 1995; Kilpatrick: 2003) is the way farmers prefer to learn. Investigating how farmers learn how to farm ostriches is significant because they are a new livestock to all farmers therefore farmers have had to upskill themselves and family to ensure economic success with ostriches.

CHAPTER FIVE
CONCLUSION

This thesis has argued that the majority of farmer learning in New Zealand occurs through informal learning channels. Informal learning has developed successfully in established communities of practice where farmers come together to share their interests, practices and interact socially. These interpersonal networks between farmers who have remained in the industry have strengthened over time and are an important factor in a farmer's ability to learn. Farmers learn most effectively through talking to other farmers. Technology transfer also occurs successfully by seeing a new technology in use at a local farm. These opportunities arise from memberships of farming groups or associations. Although formal learning institutions exist they are more commonplace for traditional, established farming industries.

Farming groups attempt to balance participation and reification (Wenger: 1998) in a way that works for their particular organisation, which creates a satisfactory learning environment that adapts to the continually changing face of farming. The major inadequacies of informal learning strategies for the farmers interviewed is that information is not attractive to new farmers that enter the industry. For example, the NZOA website no longer exists, there is a lack of books and the manual (2003) has not been updated.

Wenger's social theory of learning provided the framework for my theoretical discussion of how farmers learn. It was argued that some ostrich farmers' community of practice was centred around their membership of the Association. This thesis has demonstrated

different informal learning strategies New Zealand ostrich farmers have employed over the years in order to make farming ostriches viable. Farmer learning is a combination of talking to others, learning by doing, independent farmer and veterinarian research, looking at how others make it work and maintaining the social contact, with the exception of the Five Rivers farm (the big commercial size farm that could effectively be the entire South Island industry).

The New Zealand ostrich industry, in particular South Island farmers' experience, has been utilised as a case study of how farmers learn in New Zealand, in a small, new, innovative, unique, exotic, alternative farming industry. Currently the ostrich industry appeals to lifestyle block holders, many of whom have urban backgrounds and are aiming to live out their version of the rural idyll which requires the farming of stock. For farmers in general talking is important but it is the combination of talking, doing and formal learning that works as a learning strategy for established industries. In a new industry like ostrich farming talking is key to new ideas and mistakes not being transferred.

The history chapter outlined the important events in the history of ostrich farming in New Zealand and how those events and history have led to the kinds of learning experiences ostrich farmers have had since the beginning of the industry in the early 1990s. As the industry has developed, farmers have changed how they learn as many are now equipped with the technical knowledge and use the events organised by the Association more as a social occasion, to spend time with like-minded people. Much of the intense learning took place during the breeder phase and the transition when farmers realised it was in their best interests to specialise in a particular segment of ostrich production.

Ostriches have been in New Zealand for 15 years; those who chose to invest endured mistakes and losses. In the beginning

hundreds of investors and farmers were involved. Farmer and investor interest dwindled, the market crashed, prices came down, and then eventually products were exported. Although the evidence presented here suggests the breakdown in NZOA, there are still farmers who are members, who attend and organise field days and the annual conference. It is just on a much smaller scale and provides a different role than in the 1990s. The role and direction of NZOA has changed over time and farmer learning opportunities are initiated and continued by enthusiastic members of the Association because they are interested in improving their practice. Since 2000 NZOE has monopolised the South Island industry and directs the industry to cater specifically to NZOE's business goals. As illustrated through the ostrich industry's history there has been a huge learning curve for farmers and exporters alike. Mistakes have been costly, but farmers have adapted their methods and management to ensure a future. Part of identifying how farmers learn was to investigate the history of the ostrich industry which answered how ostrich farmer learning has changed over time.

Chapter three addressed how ostrich farmers in the South Island currently do their practice. The beginning of the chapter details each segment of ostrich farming and continued on to discuss how farmers balance farming with their working lives. Farmers produce ostriches in the segment which best suits their situation: breeders, incubation and chick rearing, or finishing. It is apparent over time ostrich farmers have developed their practices to suit their lifestyle and farming goals, in order for them to continue this practice. This chapter also explored the notion of the rural idyll. My description of chick rearing is one detailed example of how a pluriactive lifestyle works on a daily basis and how farmers make the rural idyll a reality and continually rebalance their working and home lives. Lifestyle block farmers are pluriactive and organise ostriches around their lifestyle, since many have full time

employment off the farm and most do farm work in the weekends. Lifestyle block farmers are mainly urbanites who move rurally to achieve their version of the rural idyll. Lifestyle block farmers are more reliant on the Association to establish and maintain networks compared to full time farmers. Therefore the ostrich farmer network exists and is maintained through membership of the Association which enables those farmers to interact and learn. There are different learning needs and outcomes for the part time farmers interviewed compared with full time farmers and the large scale ostrich farming operation at Five Rivers.

Chapter four, explored the notion of how farmers learn how to farm. Learning how to farm better is important for farmers and New Zealand's economy. Through communication with one another ostrich farmers have transferred knowledge. Farmers have learned from their mistakes and changed their systems to adapt their knowledge/techniques to keep running ostriches a viable farming alternative. Learning how to farm ostriches occurs through an informal mode that has been primarily organised by the Association. The annual conference is the only time when the Association gets together; members are welcome to attend to learn and contribute knowledge on current issues, as well as to catch up with friends. The community of practice is maintained and strengthened through these events. Learning how to farm ostriches occurs through a variety of channels: trial and error, previous experience, attending field days and the annual conference, interpreting written information to their situation and talking to other farmers.

New industries are reliant on associations and enthusiastic members to develop learning opportunities, marketing, the bringing together of farmers to discuss relevant issues, and to create social networks. As such, farmer learning is initiated by farmers and for farmers, therefore learning occurs in a way that is preferred by farmers. For the ostrich industry, lifestyle block holders are the

enthusiastic farmers who continue to farm ostriches and maintain the Association. This mode of informal learning is successful for ostrich farming; ostriches are grown by confident farmers who have learned and adapted. This case study has shown how a small industry and the farmers have coped and sustained production though bust and boom cycles. Compared to other successful land based industries the ostrich industry is just surviving, and until financial resources, research and development, and industry organisation and cooperation are further exploited, the industry will remain unsuccessful in terms of the criteria set out in the Mayell and Fairweather AERU report (2000). Farmers who are living their version of the rural idyll have different learning requirements compared with full time farmers and the Five Rivers operation therefore the content and mode of their learning is different which means their learning outcomes primarily serve the needs of this type of farmer. This shows that farmer learning in small industries needs to be directed at the type of farmers who are involved and most likely to be newcomers for the transfer of knowledge to have the greatest impact, especially if participation is strongly favoured over reification within the new industry. The consequence of this way of learning for farmers is that information can be lost as farmers exit the industry and less assertive new farmers may not ask questions. Specific to the ostrich industry newcomers may find it difficult to enter the industry due to the lack of marketing aimed at enticing newcomers. The main implications are that the industry remains small in numbers of producers which further increases the exporters' ability to modify the industry to suit themselves as their learning strategies and needs are different to lifestyle block farmers.

Learning in an informal way takes time to negotiate but it is based around learner's expectations and needs, therefore it meets the pressing requirements of the organisation. Participation is the

main learning strategy employed by industry players, and thus far has been successful for those farmers still in the industry. Ostrich farmers shared history has developed over time to shape their community of practice to enable open, informal learning channels.

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APPENDICES

ostrich stirfry with black bean sauce

2 chicken stock cubes

1 green capsicum sliced

6 medium mushrooms sliced

1/2 cup of spring beans

1 teaspoon sesame oil

4 tablespoons of Yeo's black bean sauce

1/2 can of baby sweet corn *(saving the juice)*

10 small heads of cauliflower & broccoli

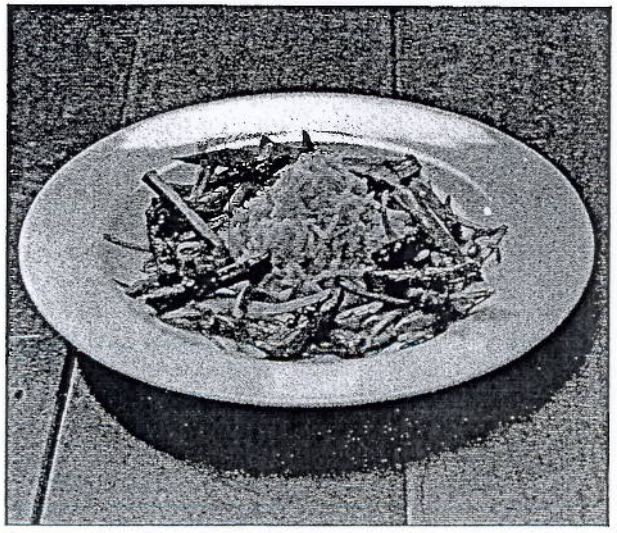
1 dessertspoon of light virgin olive oil

500g of finely sliced rump or fillet

2 tablespoons of peanut oil

1 red capsicum sliced

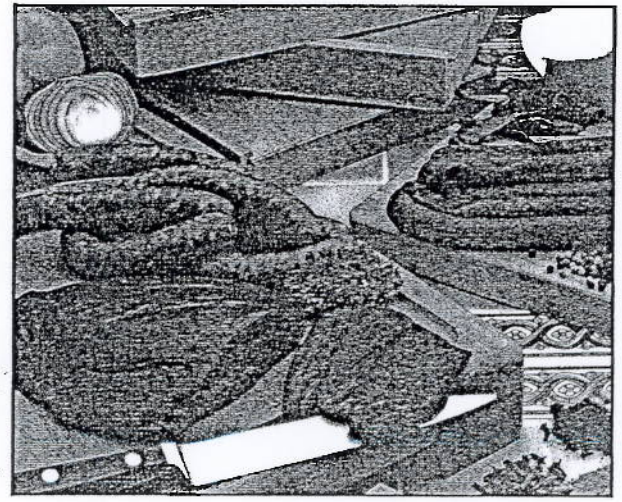
In a wok place the chicken stock cubes a cup of water and the juice of the sweet corn, bringing the liquid to the boil. Place all the vegetables in the stock and blanch for 3 minutes, strain the vegetables by running cold water over them, and again strain. Place the light olive oil in the wok and heat till blue smoke starts to appear, place the meat into the hot oil and cook for 3 minutes or until brown. Strain the meat and set aside. Add the sesame oil and peanut oil to the wok, heat and add all the vegetables at once with 1&1/2 cups of stock also adding the black bean sauce. Bring to the boil and thicken with cornflour and water, adding the sautéed meat at the last minute mixing it into the vegetables. Serve on a bed of Jasmine rice (boiled with 1 teaspoon of turmeric).
Serves four people



NEW ZEALAND OSTRICH

red meat

- New Zealand Ostrich is the natural alternative to traditional red meats
- New Zealand Ostrich combines the best of red and white meats
  - Low in fat, cholesterol and calories
  - High in iron and protein
- Ostrich meat provides an exceptionally healthy nutritious meal that is easy to cook
- Flavoursome, versatile and easy to prepare
- A favourite amongst chefs internationally



OSTRICH ASSOCIATION NZ INC.

NZOA
PO Box 896 Timaru
Phone 03 6855 772 Fax 03 6855 752

New Zealand OSTRICH

NATURAL TENDER LEAN RED

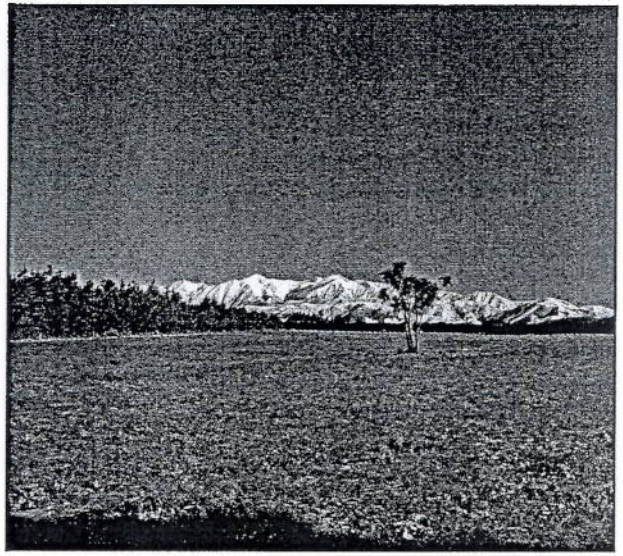
NEW ZEALAND OSTRICH PAMPHLETS

APPENDIX ONE

NEW ZEALAND OSTRICH

natural

New Zealand has a reputation throughout the world for producing agricultural produce grown in a totally natural clean environment. The addition of Ostrich to New Zealand agribusiness adds a quality gem to the overall clean green crown.



OSTRICH ASSOCIATION NZ INC.

NEW ZEALAND OSTRICH

tender

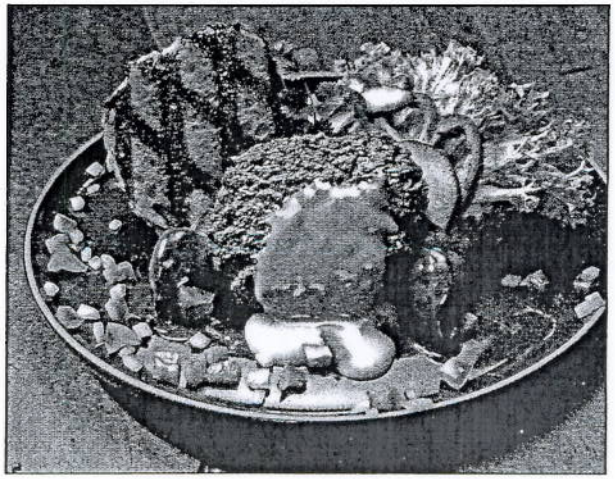
New Zealand Ostrich meat is a rich succulent red meat, very lean and fast to prepare. It is incredibly versatile requires no trimming and has a consistent "melt in the mouth" texture. Its natural sweetness makes it ideal to combine with a wide variety of exotic flavours and cooking applications.

ostrich burger

500g Ostrich meat *(mince)*
1 egg
1/4 cup of rolled oats *(to bind the mixture together with the egg)*
1 finely chopped avocado
1 small onion *(finely diced)*
1/4 teaspoon of mixed herbs
3 sprigs of finely chopped parsley
Salt and pepper to taste

Mix all the ingredients together in a bowl and place in the refrigerator for a couple of hours until firm. Make into balls & flatten to make burgers, place on a hot B.B.Q. and cook for two minutes, either side and serve on a hot toasted sesame roll with your favourite toppings e.g. lettuce, tomato, beetroot, cucumber, onion and a cooked egg, topped with your favourite B.B.Q. sauce.

Serves six people



NEW ZEALAND OSTRICH

lean

NUTRITIONAL COMPARISON
(per 100 grams of cooked lean meat)

MEAT	CALS	PROTEIN	FAT	SAT.FAT	CHOL.
Ostrich	97	22g	2g	0.0g	58mg
Chicken	140	27g	3g	0.9g	73mg
Turkey	135	25g	3g	0.9g	59mg
Beef	240	21g	15g	6.4g	77mg
Lamb	205	22g	13g	5.6g	78mg
Pork	275	24g	19g	7g	84mg

Source - Australian Ostrich Association.

ostrich fillet with mushroom sauce

1 dessertspoon of virgin olive oil
Salt & pepper to taste
1 cup of red wine
3 tablespoons of yoghurt
6 slices of Ostrich fillet 3cm thick
12 cloves of whole garlic
12 medium mushrooms cut in halves
1/4 of a cup chicken stock
1 tablespoon of light olive oil

Mushroom Sauce

In a skillet heat the oil and add the garlic, salt, pepper and mushrooms cook until tender on a low heat. Place the chicken stock in a saucepan and cook until boiling, reduce to a medium heat, then add the red wine and yoghurt. With the lid off let the liquid reduce by half or until creamy. In a frying pan add the olive oil and bring to a high heat and cook the steaks for 3 minutes on either side. Pour sauce on a warm plate, place steak on top and arrange mushrooms and garlic. Serve with your favourite vegetables or salad.

Serves six people

See photo on front cover.

The New Zealand Ostrich Association is an active organisation committed to the long term stability and success of Ostrich farming in New Zealand agriculture.

The association has ten branches throughout the country whose members elect an Executive Committee each year to administer the Association's business.

The Executive works actively along side Government agencies and interested parties to ensure the industry develops strong foundations for the future.

The New Zealand Ostrich Asssociation has a

- Code of Ethics.
- Welfare Code.
- Draft Industry Agreed Standards.

Currently Developing

- An Industry Strategic Plan.
- Quality Assurance Programme.
- A Product Education Programme.

On-going Programmes

- Product Development.
- Demanding that all Ostrich meat is safe to the consumer.
- Effective communication between the NZOA Executive, Members and parties interested in feed and pasture development.
- Supporting producer driven initiatives, active networking between branches, farming and product promotion.

The New Zealand Ostrich Association

The Association was established in January 1994. Key objectives established at that time continue to be the focus today.

These are:

- **To assist in the growth, development and promotion of the Ostrich farming industry in New Zealand.**
- **To provide technical support and training to members.**
- **To provide essential research and development.**
- **To establish co-operative relationships with other international associations or organisations with compatible objectives.**

In addition, today the Association's commitment to quality is expressed in these market positioning statements:

Vision Statement

"To be recognised as the leading International provider of quality Ostrich products and services."

Mission Statement

"To develop a profitable Ostrich industry producing superior quality products and services that meet future customer needs and capitalise on New Zealand's natural advantages and technology in a sustainable manner."

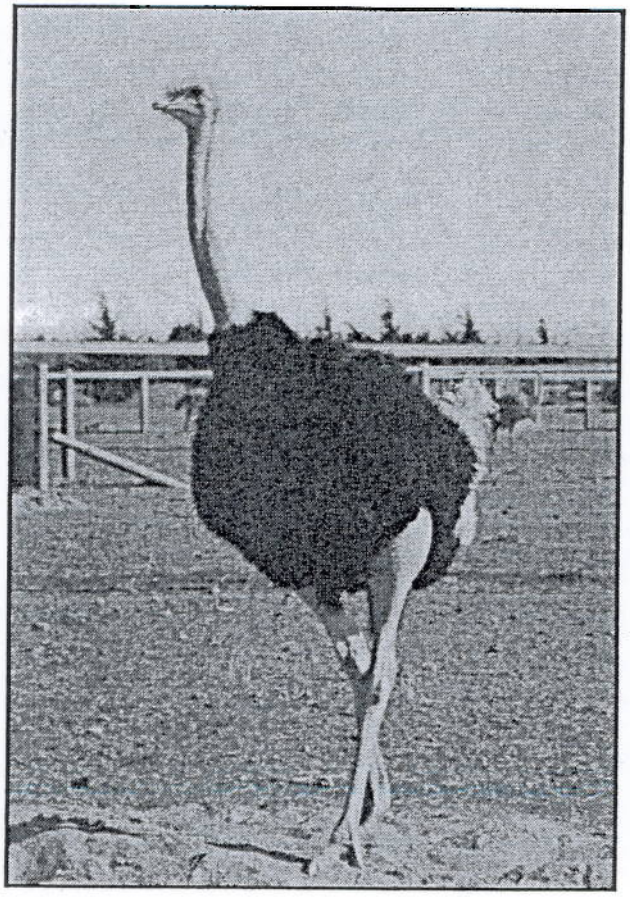
Contact:

OSTRICH ASSOCIATION NZ INC.

PO Box 896, Timaru
Telephone (03) 685 5772
Facsimile (03) 685 5752

We recommend you deal with a Member of the New Zealand Ostrich Association

Ostrich Farming in New Zealand



A Growth Industry

New Zealand Ostrich

The Ostrich produces both multiple off-spring and products. They are suitable for farming throughout New Zealand. New Zealand Ostrich are exceptional feed converters reaching excepted slaughter weight at 12 months of age.

The Ostrich

Height	2.1-2.5 metres
Weight	Breeder 110-130 kg average Slaughter 12 months 90-110 kg
Maturity	Hen around 20-24 months Cock 25-30 months
Egg Production	Hens lay an average of 40 eggs per season *Egg hatching time:* 42 days
Egg Weight	1-1.8 kg
Chicks per year	This varies considerably. An average hen is expected to produce in excess of 20 chicks per year
Meat	30 kg or about 30% of body weight
Leather	Average hide 12-15 sq feet
Feathers	750 gm per bird
Processing Age	10-14 months
Farm Environment	Low paddock maintenance. No prevalent high risk, contagious diseases. Easy care.

MEAT

Ostrich meat offers consumers the best features of both red and white meat.

Todays consumers will continue to be more specific in their demands for a lean, high quality, taste satisfying protein source.

Features

- A red meat.
- Lean, tender and easy to prepare.
- Has Heart Foundation Tick of approval.
- A perfect meat to prepare medium-rare.
- High in iron and protein.
- As low in cholesterol as Turkey.
- Less calories per 100 gm than chicken, venison, beef, lamb or pork.
- About 50% less fat than chicken and about 70% less fat than beef.
- Faster to cook than most meats due to the low fat content.
- Versatile - it has a unique, mild flavour and an ability quickly to absorb flavours.
- A perfect low calorie, high protein source for athletes and body builders.
- Popular in Europe particularly Germany, France, Switzerland and Sweden.
- Increasing demand in Asian countries.

LEATHER

Ostrich hide is a world leader in the prestige leather market. Up to 14 sq feet of leather can be obtained from one hide.

Ostrich leather is renowned for its distinctive quill pattern, which can be used in many different forms to accentuate and highlight the finished product.

The leg leather also has a very different and distinct pattern, ideal to accent the very best of modern fashion.

Features

- Highly decorative.
- Versatile.
- High tensile strength.
- Durable.
- Exotic.
- Stunning as gloves and belts, handbags, purses, wallets, briefcases, satchels, small personal luggage and jewellery.
- A subtle but durable leather, ideal for boots and shoes.

SMALL GOODS

Biltong, Jerky, Biersticks, Liverwurst, cured and smoked meats are growing in demand with a broad customer base.

Features

- No added fat (unlike most alternative small-goods products).
- Moist.
- Natural.
- Totally made from Ostrich meat.
- Wonderful flavours - including many favourites.
- An ideal snack - filling and tasty.

FEATHERS

These beautiful plumes have both decorative and practical uses. They add a special touch to floral arrangements and some fashion items

For many years they have been regarded as the perfect duster because of their anti-static properties.

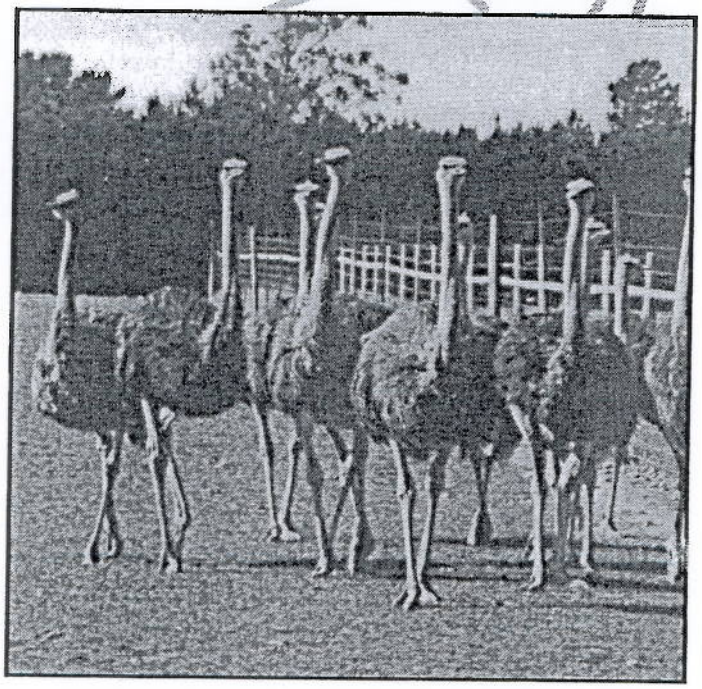
OIL

Small quantities of oil are obtainable from Ostrich grown for slaughter. Processed Ostrich oil has deep penetration qualities ideal for the cosmetic industry and for those whose skin is constantly being dried and damaged by outdoor work and activities.

EGGS

Each Ostrich egg is the equivalent of two dozen poultry eggs.

Excellent baking qualities, especially suitable for cakes, sponges and pavlovas, ideal in quiche and omelets.



- New Zealand is one of the few countries in the world that have the ability to farm Ostrich throughout the year under natural pasture conditions enabling supplementary feeds to be kept to a minimum.
- Feed conversion to the recommended 12 month slaughter weight is superior to most traditional stock.
- Most New Zealand fencing systems can be adapted to Ostrich with ease and minimal costs.
- Ostrich is suited to economic and lifestyle blocks alike, offering many options either as an alternative or an addition.
- Ostrich are easy care and display good temperament that enables ease of handling.

APPENDIX TWO
AGENDA FOR NZOA CONFERENCE 2005

NZOA 2005 AGM and Conference.
Saturday 11th June 2005

9 am – 9.45 am	Coffee and Registration.
9.45 am – 10 am	Welcome/Opening address by President – Neil Skerten New members' introduction - Therese Introduction for any new comers

Morning session to be chaired by Roy Beer

10 am – 11 am	Keynote speaker from GSINZ – Dr Peter Stevens.
11 am – 11.30 am	Early chicks: How do we produce them? What do we feed them on? (Special starter) Diane Beer Alison Newman Tony Bryan 5 mins from each speaker 15 mins questions.
11.30 am – 12.pm	Tagging. Therese Amsler Rod Grout Peter Hishon 5 mins from each speaker 15 mins questions
12 pm – 12.30 pm	What to do for scouring both preventative and cure? Diane Beer Alison Newman Trish Best 5mins from each speaker 15mins questions.

12.30 pm – 1.30 pm Lunch

Afternoon session to be chaired by Brendon Best.

1:30 pm – 2:20pm	Guest speaker from Lincoln University – Dr Hamish Brown. Pasture for Ostrich
2.20 pm – 3.15 pm	How are the current markets and market access in the future? North Island: - Michael McKenzie South Island: - Pat Houlahan 20 minutes for each speaker and 15 minutes for questions
3.15 pm – 3.30 pm	What can we do to avoid pelt damage? Pat Houlahan - NZOE Prior to afternoon tea Neil Skerten to close the conference, thanking speakers, attendee's and the Blenheim branch for their organisation.
3.30 pm – 4.00 pm	Afternoon tea
4.00 pm – 4.30 pm	AGM
4:45 pm – 5:15 pm	Drinks
7.00 pm	**Conference dinner to be held at Bellafico restaurant**

Programme for Sunday.

10 am – 12 pm	Farm visit. Meet at Alison Newmans, 447 Dillion Point Road for the first part and then across the road to Therese & Wally Amslers 325 Swamp Road.
12 pm	Lunch
1-30pm – 3.30 pm	Wine trail

APPENDIX THREE
INFORMATION SHEET

University of Canterbury
Department of Sociology

Ostrich farmers in the South Island

I am inviting you to participate in the research project ' ostrich farmers in New Zealand'. The aim of this project is to explore why ostrich farmers choose ostriches and how they learn how to farm them.

You will be asked to talk about your experiences in an interview in your own home or another suitable location. The focus of this discussion will be how you came to be interested in ostriches and how you came to adapt your farm so you could run ostriches, What are the main issues facing them in producing an exotic animal? How important is your personal network? How do farmers respond when problems arise once ostriches are established? I hope you will raise issues which are important to you in order for me to understand the decisions you made from your point of view.

The interview will take about 1 hour. If there are topics not covered in this time frame, I will ask you if you want to do a follow-up interview. As a participant, you will be asked if you are willing to have the interviews taped, and only if I gain your permission will I proceed in recording them.

You can be assured of the complete confidentiality of data gathered in this investigation. At any stage you are free to withdraw from the project. You can also ask me not to include things we may discuss during the interview.

To ensure anonymity and confidentiality I will change the names of those involved in this project and any distinguishing characteristics that are likely to make you recognisable by others. Records from the interviews will be stored separately from your names and addresses.

If you have any queries, please feel free to contact me.

Lileko Lishomwa
Department of Sociology
University of Canterbury
Private Bag 4800
CHRISTCHURCH
ltl11@student.canterbury.ac.nz

This project has been reviewed and approved by the University of Canterbury School of Sociology and Anthropology's Human Ethics Committee.

Dr Alison Loveridge email (Phone 3642981, email Alison.loveridge@canterbury.ac.nz and Dr Carolyn Morris (Phone 3642649, email carolyn.morris@canterbury.ac.nz) are supervising it.

NZOE (South Island) LTD

OSTRICH KILLING SCHEDULE
MEAT AND SKINS

Effective For November 2005

APPENDIX FOUR
SCHEDULE EFFECTIVE FOR NOVEMBER 2005

SLAUGHTER BIRDS
Aged less than 14 months

SCHEDULE - TRIM CARCASS WEIGHT

Weight	$/Kg	
42kgs+Over	$7.10	***
40-41.9kgs	$7.50	***
38-39.9kgs	$8.00	***
36-37.9kgs	$8.50	***
34-35.9kgs	$9.00	***
32-33.9kgs	$8.00	
31-31.9kgs	$5.50	
Under 31kgs	No payment, you will receive a bill of $50 to compensate slaughter costs, plus the normal charge for freight	

*** Please note, in accordance with our commitment to farmers the minimum payment for birds in these ranges will be $320per animal

MANUFACTURING BIRDS
Aged 14 months plus
No Manufacturing Birds
Until Notified

SCHEDULE - TRIM CARCASS WEIGHT

Weight	per kg
45 kgs & over	N/A
Under 45kgs	N/A

Payment

Will be made in full 30 business days following slaughter
Prices are net of all slaughter, processing and MAF Inspection charges.

Trim Carcass Weight

The carcass is weighed hot, after removal of the neck and brisket and all internal and external fat, and removal of the leg from below the knee.
Bruising or other damage may also be trimed.

All birds submitted for slaughter

Must be subject to Farm Quality Assurance
Must be booked in with a livestock agent
Must be drafted through the livestock agent
Must have a properly filled in ASD form.

PLEASE NOTE THAT FREIGHT WILL BE DEDUCTED FROM YOUR PAYMENT

OSTEX Corporation Ltd

OSTRICH KILLING SCHEDULE
MEAT AND SKINS

Effective Jan-07

APPENDIX FIVE
SCHEDULE EFFECTIVE FOR JANUARY 2007

SLAUGHTER BIRDS
Aged less than 14 months

SCHEDULE - TRIM CARCASS WEIGHT

Weight	$/Kg	
42kgs+Over	$6.40	***
40-41.9kgs	$7.00	***
38-39.9kgs	$7.30	***
36-37.9kgs	$7.80	***
34-35.9kgs	$8.30	***
32-33.9kgs	$7.50	
31-31.9kgs	$5.50	
Under 31kgs	No payment, you will receive a bill of $50 to compensate slaughter costs, plus the normal charge for freight	

*** Please note that a minimum payment of $300 per animal will apply to birds in these five weight ranges

MANUFACTURING BIRDS
Aged 14 months plus
No Manufacturing Birds
Until Notified

SCHEDULE - TRIM CARCASS WEIGHT

Weight	per kg
45 kgs & over	N/A
Under 45kgs	N/A

Payment

Will be made in full 30 business days following slaughter
Prices are net of all slaughter, processing and MAF Inspection charges.

Trim Carcass Weight

The carcass is weighed hot, after removal of the neck and brisket and all internal and external fat, and removal of the leg from below the knee. Bruising or other damage may also be trimed.

All birds submitted for slaughter

Must be subject to Farm Quality Assurance
Must be booked in with a livestock agent
Must be drafted through the livestock agent
Must have a properly filled in ASD form.

PLEASE NOTE THAT FREIGHT WILL BE DEDUCTED FROM YOUR PAYMENT

APPENDIX SIX
OSTRICH TIMELINE

New Zealand Ostrich timeline

1883 Ostrich farm near Christchurch

1886 Ostrich farming near Auckland

1980 Modern global ostrich farming started

1991 **November** 40 eggs and 12 live chicks imported to Rotorua

1992 NZOA Started forming

1993 NZOEC claims modern ostrich farming in NZ began
May 1st importation of eggs arrived at Moran's

1994 **January 23** Inaugural meeting of New Zealand Ostrich Farmers Association (NZOFA)
March 28 Shipments of live birds cost $40,000-$60,000 NZD
June 4 40 Members
September Ostrich Breeders North Canterbury ltd established
October 10 50 circa birds in New Zealand
November 14 NZOFA and O.A (NZ) amalgamated Mike Moran President of the Association

1995 First New Zealand market crash
February 25 Extraordinary general meeting of NZOFA and Ostrich Association (NZ)
March 3 150 Members
June 650 birds in New Zealand
25 AGM in Rotorua – renamed NZOA, 250 people attended. $50,000-$70,000 per breeding bird
July 1st Importation of live ostrich arrive at Moran's
August 31 174 members
September 6 NZOA newsflash volume 1
9 Membership costs $300 + GST
October 6 185 Members, Auckland branch has 50
24 195 Members
November 21 Office with paid secretary will be needed, there is an 0800 number for investors
17 A pair of chicks which costs NZ $30,000
Jim Lawry President of Association

1996 **January 24** 209 Members

February 216 Members.
Ostrich pins for lapel available, sterling silver $30
March 2 Ostrich meat currently fetches $200 a kilogram in Japan
6 Letter from Sockburn plant (Alliance Group) saying they cannot slaughter ostriches as not covered in Meat Act
May Estimated 3600 birds, 450 were hatched from eggs laid in New Zealand. Importation of eggs and live birds were primary source of increased numbers.
July 18 Jim Bolger visits Moran's farm
Winter/ Spring Eggs imported from Canada
3rd plane load, 100% success of live birds into quarantine - Subsequent (administrative) ban by MAF of live imports
Jim Lawry President of NZOA

1997 **February** First processing of ostrich meat for domestic market at Lincoln
26-28 The 1st International ostrich meat congress in South Africa, 3 exec members attended
March 12 First time NZ ostrich meat served in restaurant – the Chateau on the Park (paid $70/kg)
NZOE set up
Mid 1997 Ostrich and Emu Standards Council (OESC) set up to develop industry agreed standard for slaughter and processing
July 10 $11 per kilogram trimmed carcass weight for birds over 60kg carcass and $7 per kg for birds between 40kg and 60kg. Offered by Canterbury ostrich processors
September 23 Seminar given by Moran in Invercargill about ostrich potential
Peter Shannon President of NZOA

1997/1998 Second New Zealand market crash

1998 New Zealand Ostrich Export company pioneered the export of raw salted hides
Ostex set up
Last recorded importation of ostriches to New Zealand
February 26 OESC met to update terms of reference
March 24 Import of birds into Auckland, broke many MAF procedures and protocols
June 25 A good breeding pair of older birds is worth $12,000 to $18,000. Commercial chicks can be bought

from $150 to $500, and good chicks with breeding potential cost $2000 to $4000.
June 26-28 association's annual conference held at Lincoln
July 7 Code of recommendations and minimum standards for the welfare of ostrich and emu produced
September 3 Exec decides not to renew American Association membership
10 Anne Munro (President of NZOA) lectures 3rd and 4th Ag and Hort students at Lincoln about emerging industry
November 22 302 members
December 3 Big Fresh launches New Zealand-bred ostrich meat in its supermarkets (organised by Ostma)
Anne Munro President of NZOA

1999

Domestic slaughter began to exceed local consumption
Estimated 2500 breeding hens, 12,000 chicks and 10,000 rising 1 year old birds in New Zealand
Big farm at Five Rivers purchased
February 9 Exec decides not to renew International ostrich association (IOA) membership
March 3 Moran's farm went into liquidation
23 Industry workshop at Methven, 37 attend
April 19 Food and fibre minister John Luxton launched and signed the Ostrich and Emu industry agreed standard, which sets out regulations for slaughtering the birds for human consumption
April 23-24 Industry workshop in Methven
24 NZOA commits $3,000 to OESC as seed funding for establishing export protocols
June 24 Decided Ostrich journal should be produced once a year as a yearbook
25-27 Association annual conference in Hastings.
NZOA meat brochure launched
July Meat worth $6/kg through mobile slaughter system established in North Island by Emu and Ostrich Direct
Taranaki branch may go into recess – lack of members
NZOA will need to become a professional body
September Exec meets with NZOE to discuss roles
October 19 First trial shipment left NZ for Netherlands
November 1 Animals production Act
Anne Munro President of NZOA

2000

May 19-20 Annual ostrich conference in Timaru
June 22 Second trial kill at Clover Exports

October 19 1st Shipment of ostrich meat leaves Invercargill for Amsterdam (500kg)
November 7 A 40kg chick is worth about $150, and a finished bird is worth $250 to $350
December protocols for export of ostrich meat to Europe were adopted and export commenced.
Proven breeders were selling for $400-$700 per hen, average meat price $16.75 kg.

2001

June Annual Ostrich Conference in New Plymouth, 130 Attended
July 26 opening of the North Island's first ostrich export-accredited processing plant in Feilding, can process 150 a day
Sept NZ government gives $93,000 grant to ostrich farmers.
About 4000 yearling birds provide meat for the domestic market
October 18 Need more finishers, Hishon planning to kill in Canterbury at end of 2002
October 20 For 50kg-plus carcass weight birds, the schedule has been set at $11/kg, reducing to $9.50kg for birds between 45kg and 49.99kg, $8/kg for 43kg to 44.99kg and $6/kg for birds 40kg to 42.99kg

2002

May 23 Carcasses valued between $300-$350.
24-25 Annual ostrich conference in Southland, visit Five rivers farm and Lumsden
31 All stock movement must have an animal status declaration form
August 28 Field day at Five Rivers (1st open day, about 100 people attended), schedule is $7.75/kg for 44kg-plus birds
Roy Beer President of NZOA

2003

Conference at Lincoln
March 1 NZOE finalises agreements with Trinations $7.10 per kilo for 44 kg and over
May Clover exports lost US license
August 29 Big farm wants to pump 15 million litres a day to farm for irrigation
Roy Beer President of NZOA

2004

Clover exports lost EU license and then all their licenses
March 4 NZOE announces will use plants in Mosgiel and Rakaia due to Clover closing

April MAF investigates 1st farm effected by wireworm disease
June Ostrich conference in Christchurch
Neil Skerten President of NZOA

2005

4 Feb Birds paying $7.30 a kilo
14 March Finishers buying 4 month old birds for $150
Finishers are paid $340 a head.
May 29 field day at Neil's
June 11 NZOA annual conference in Blenheim
Neil Skerten President of NZOA